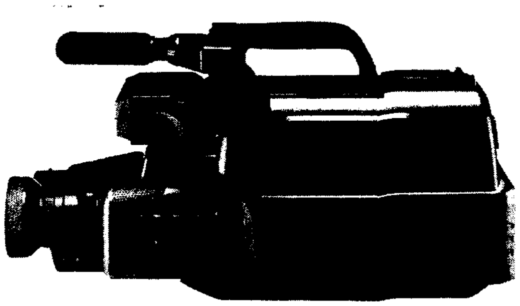
VHS-Camcorder set VKR6855/20/21

VHS-Camcorder VKR6855/00/01

Service
Service
Service



Service Manual

Camcorder set **VKR6855/20** consists of:

Camcorder : VKR6855/00
A/C Adapter : SBC5409/00
Battery : SBC5215/00
Shoulder strap : SBC5410/00
Adapter cable : 22AV5193
Back-up batt. : LR1130

Camcorder set **VKR6855/21** consists of:

Camcorder : VKR6855/01
A/C Adapter : SBC5409/00
Battery : SBC5215/00
Shoulder strap : SBC5410/00
Adapter cable : 22AV5193
Back-up batt. : LR1130

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Servicio

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CS 28 356

Technical Information

SERVICE CAUTION

1. PREPARATION FOR CAMERA ADJUSTMENT

Remove cabinet parts and remove camera section from VTR refering disassembly section and place them as shown in Fig. T1.

Connection of Extension Cable (A) 4822 321 22748 Camera Holder (refer to next item) are necessary for servicing.

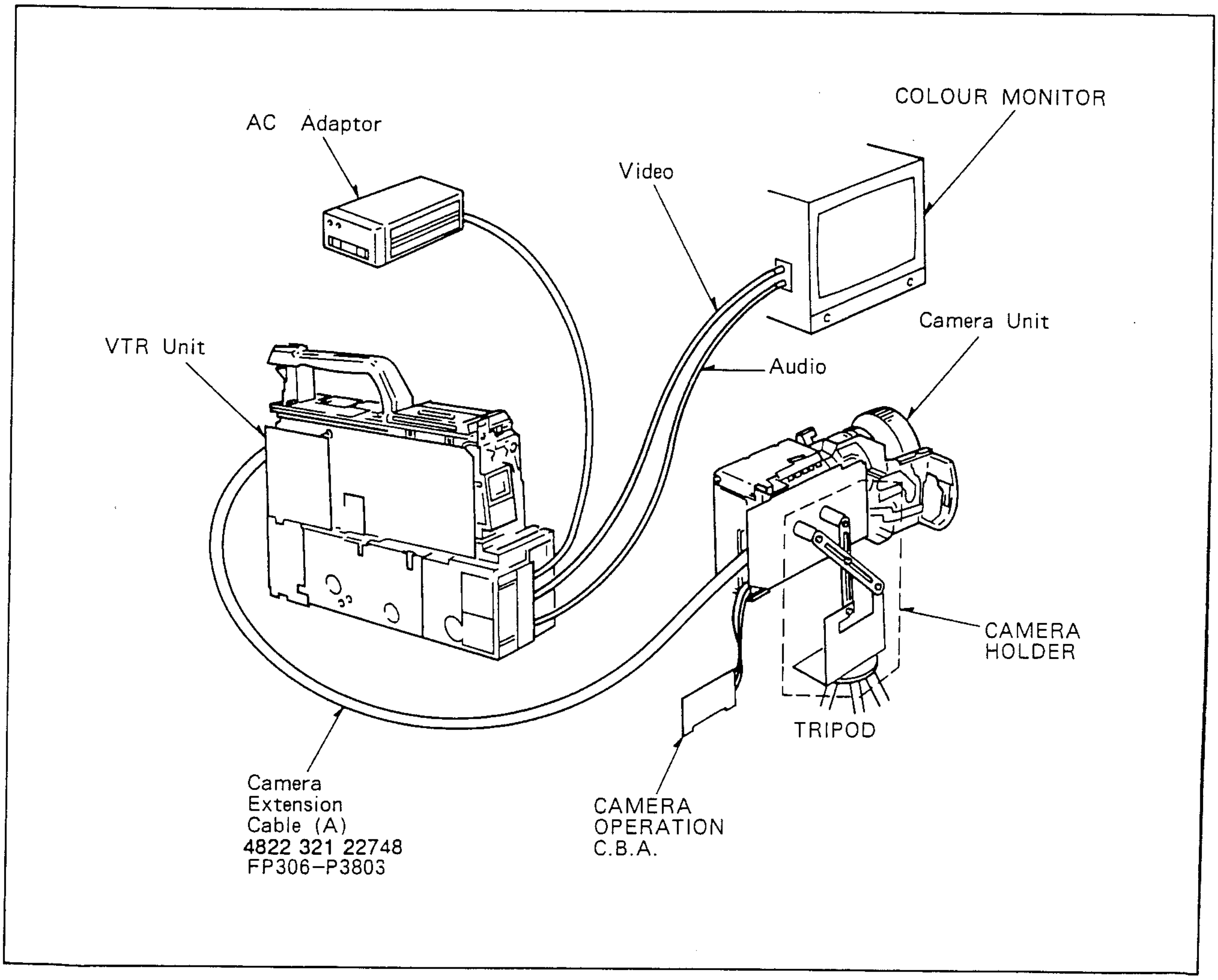
AC Adaptor
Video
COLOUR MONITOR
VTR Unit
Audio
Camera Unit
CAMERA HOLDER
TRIPOD
Camera Extension Cable (A) 4822 321 22748 FP306–P3803
CAMERA OPERATION C.B.A.

Fig. T1

2. HOW TO USE CAMERA HOLDER ARM (VEK0431)

This Camera Holder Arm which is adjustable the span must be mounted to VFK0382 (Camera Holder of NV−M5) and it can be used with VFK0432 for camera adjustments or checking for NV−M1000EN/EM.

(A)	4822 395 50395	Holder Spacer (2pcs)
(B)	4822 432 60215	Camera Holder Arm
(C)	--- XSN26+25	Screw (2pcs.)
(D)	4822 395 90566	Camera Holder

(1) Fix the Holder Arm (4) and (5) temporarily by screw (1) as shown in Fig. T2.

(2) Mount the Camera Holder Arm (B) to the Camera Holder (D) by screws (2) and (3) as shown in Fig. T3.

(3) Tightn the screws (C) with the Holder Spacers (A) as shown in Fig. T2.

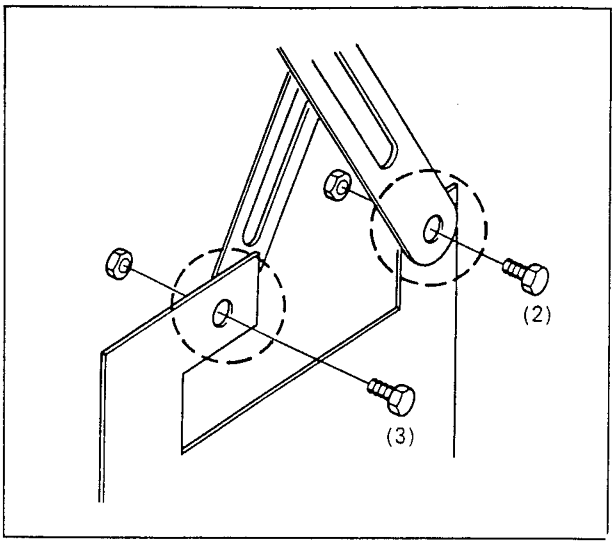

Fig. T3

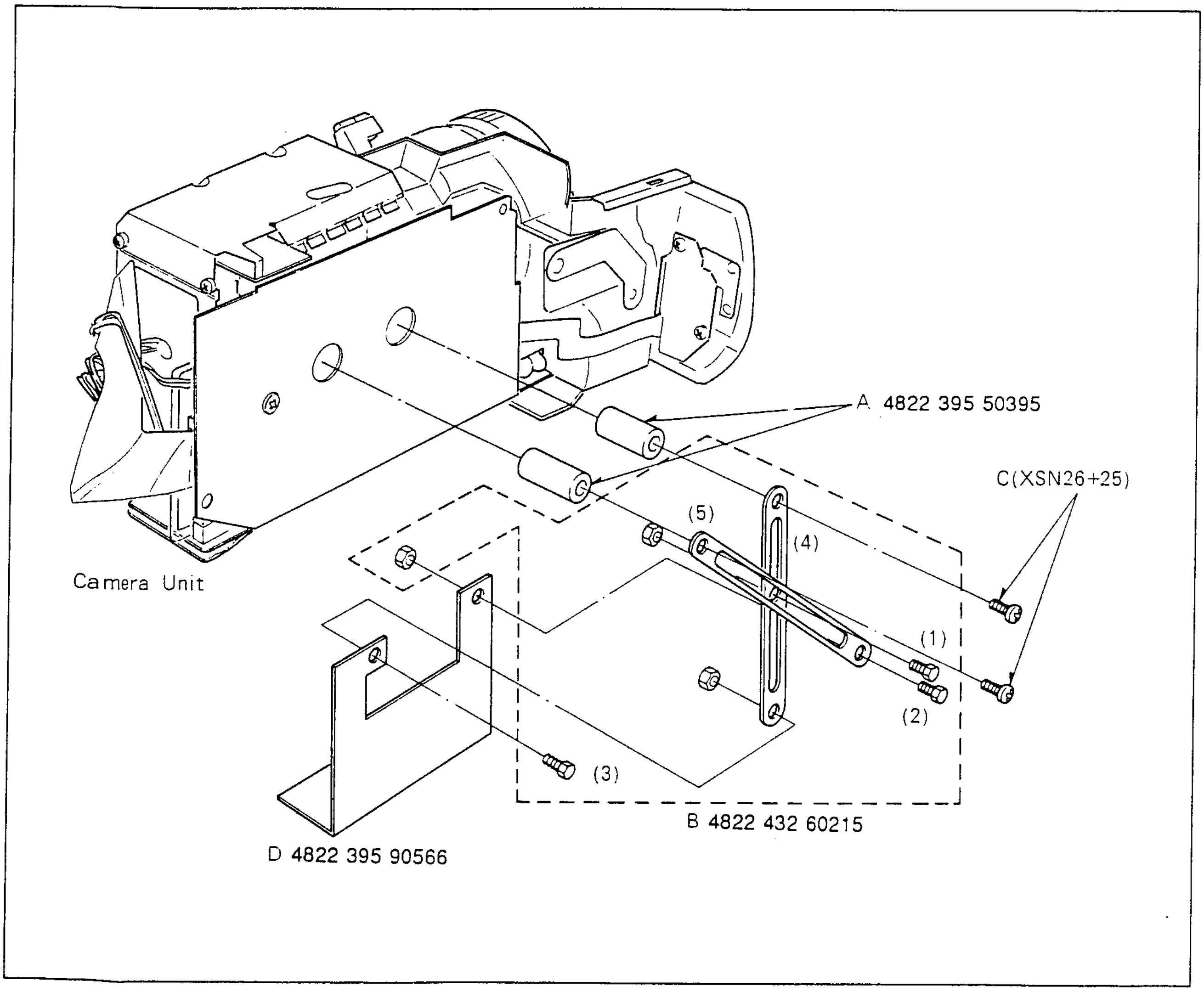
A 4822 395 50395
C(XSN26+25)
(5)
(4)
(1)
(2)
(3)
Camera Unit
B 4822 432 60215
D 4822 395 90566

Fig. T2

3. SERVICE THE CAMERA SECTION

When servicing the Camera Section, connection of 18Pin Extension Cables (B) 4822 395 30279 is necessary as shown in Fig. T4.

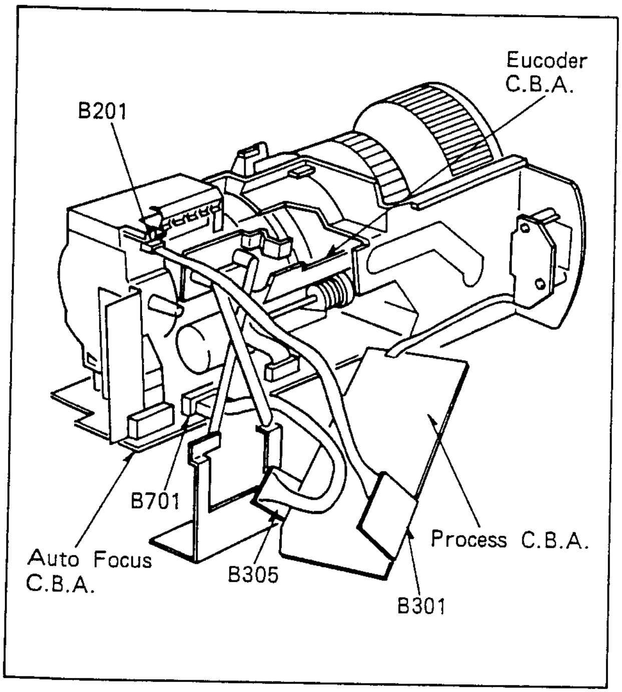
Eucoder C.B.A.
B201
B701
Auto Focus C.B.A.
B305
Process C.B.A.
B301

Fig. T4

4. HOW TO REPLACE THE LENS UNIT

1. REPLACEMENT AND ADJUSTMENT PROCEDURES
(REPLACEMENT OF FOCUS LENS UNIT)

(1) Remove the Camera Unit from the VHS Movie.
(2) Remove the C.B.As (Proscess, Auto Focus, Sensor) and Lens Cover from Camera Unit.
(3) Unscrew the Screw (A) and remove the zoom Motor Unit.
(4) Unscrew the Screw (B) amd remove the Focus Motor Unit.
(5) Unscrew the Screw (C) and remove the Focus Drive Unit.
(6) Unscrew the Screw (D) and remove the Encoder C.B.A.
(7) Unscrew the Screw (E) and remove the Lens Angle B.

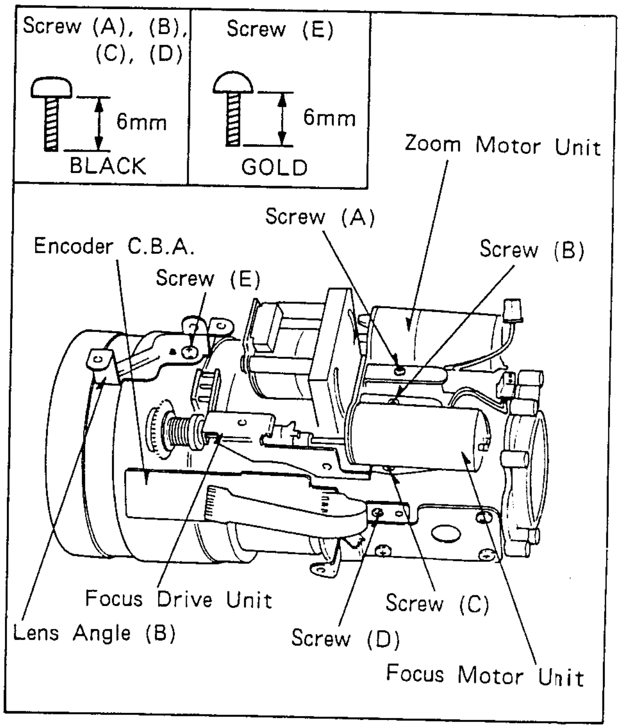
Screw (A), (B), (C), (D)
6mm
BLACK
Screw (E)
6mm
GOLD
Zoom Motor Unit
Screw (A)
Encoder C.B.A.
Screw (B)
Screw (E)
Focus Drive Unit
Screw (C)
Lens Angle (B)
Screw (D)
Focus Motor Unit

Fig. T5

(8) Remove the Focus Fastener and Tape as shown in below.
(9) Remove the Focus Ring by turning the Focus Adjustment Pitch to the counter clockwise.

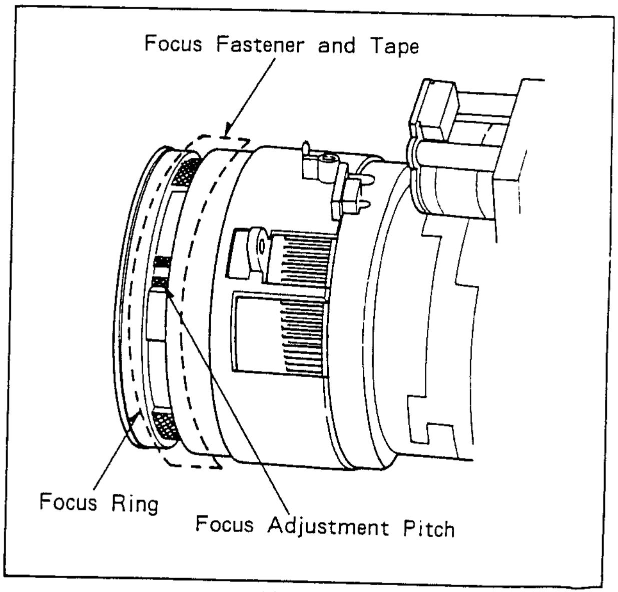
Focus Fastener and Tape
Focus Ring
Focus Adjustment Pitch

Fig. T6

(10) Unscrew 4 Screws (F) and remove the Focus Lens Unit with Iris Unit as shown in below.
(11) Remove the Iris Unit from Focus Lens Unit and replace the Focus Lens Unit.

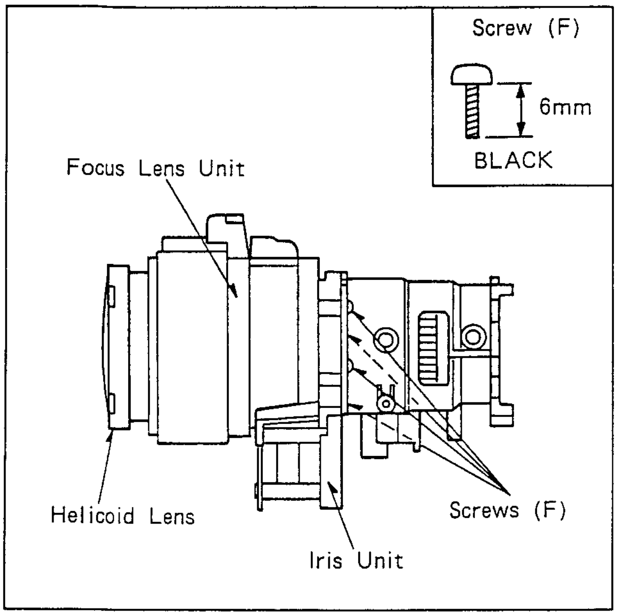
Screw (F)
6mm
BLACK
Focus Lens Unit
Helicoid Lens
Screws (F)
Iris Unit

Fig. T7

[ADJUSTMENT PROCEDURES]

Note:

Do not remove the Helicoid Lens from Focus Lens Unit because they have the relationship to be paired.
If the Helicoid Lens is happened to be removed, the Helicoid Lens should be installed as following step.

a. Install the Helicoid Lens so that the projection with groove on Helicoid Lens comes to the portion "A" on lens unit as show in below.

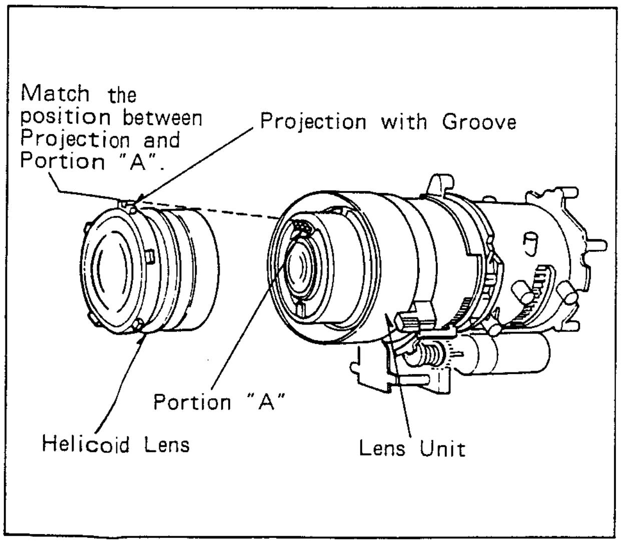
Match the position between Projection and Portion "A".
Projection with Groove
Portion "A"
Helicoid Lens
Lens Unit

Fig. T8

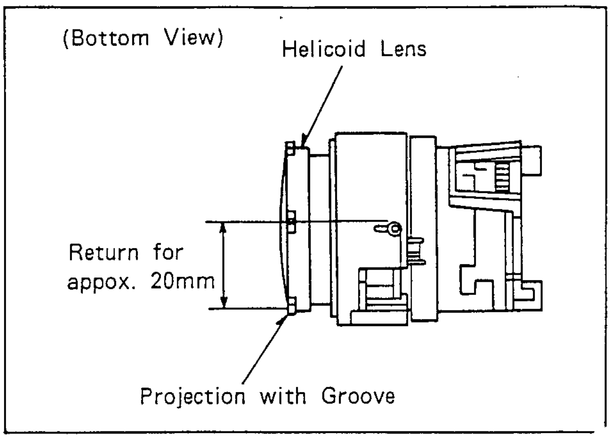
(Bottom View)
Helicoid Lens
Return for appox. 20mm
Projection with Groove

Fig. T9

(12) After replacing the Focus Lens Unit, Install the Iris Unit to Focus Lens Unit.
(13) Install the Focus Lens Unit with Iris Unit and then tighten 4 Screws (F) as shown in Fig. T7.
(14) Adjust the Helicoid Lens position as follows.

a. Turn the Helicoid Lens to fully clockwise and return it for approx. 20mm (so that next installation become easy) as shown in Fig. T9.

(15) Install the Focus Ring so that the Portion "B" on Focus Ring comes to Projection with Groove on Focus Lens Unit as shown below.

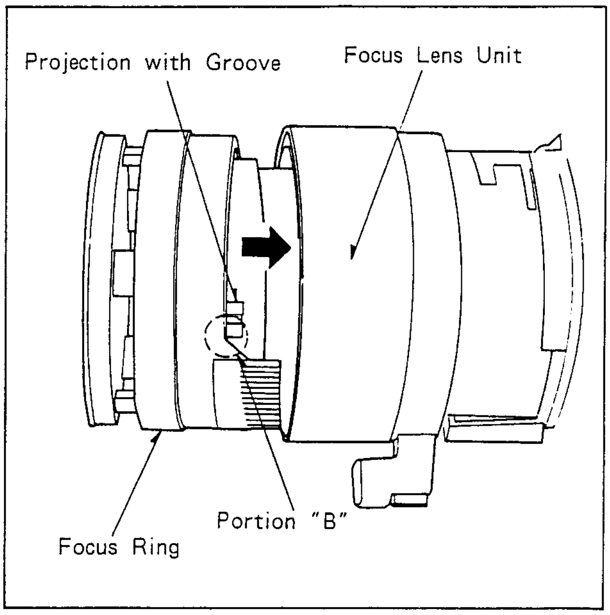
Projection with Groove
Focus Lens Unit
Portion "B"
Focus Ring

Fig. T10

(16) In order to lock the Focus Ring, Turn the Focus Adjustment Pitch to clock wise.

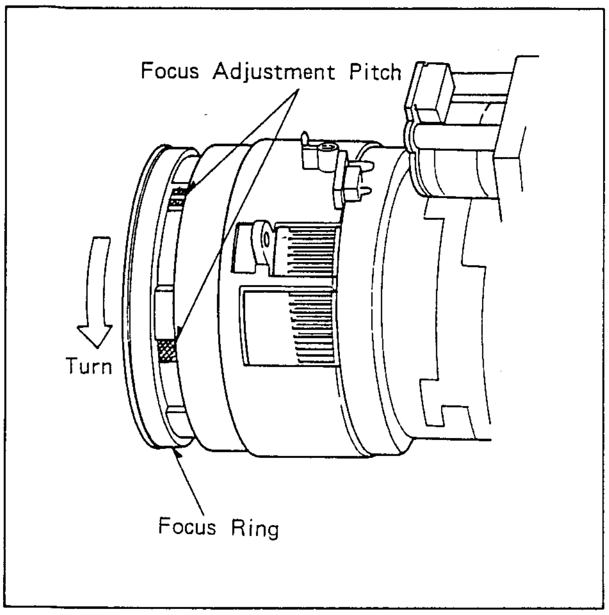

Fig. T11

(17) Install the Focus Fastener and Tape as shown in Fig. T6.
(18) Install the C.B.As (Process, Auto Focus, Sensor, Encoder) and Zoom Motor in reverse assembly order.
(19) After installation of the Focus Ring, Adjust the position of Back Focus Picth as follows.

a. Prepare the Hunting chart for object and aim the camera at the hunting chart 3m distance.
b. Focus the Lens on the object.
c. Confirm that Focus Ring indicates 3m.
d. Adjust the Back Focus Pitch so that the sharpest focus is obtained.
e. Zoom all the way back and adjust hte Back Focus Pitch so that the sharpest focus is obtained.
f. Repeat the procedure as follows, Zoom In, Focus, Zoom Out and adjust the Back Focus Pitch until the best focus is obtained over the entire zoom range.

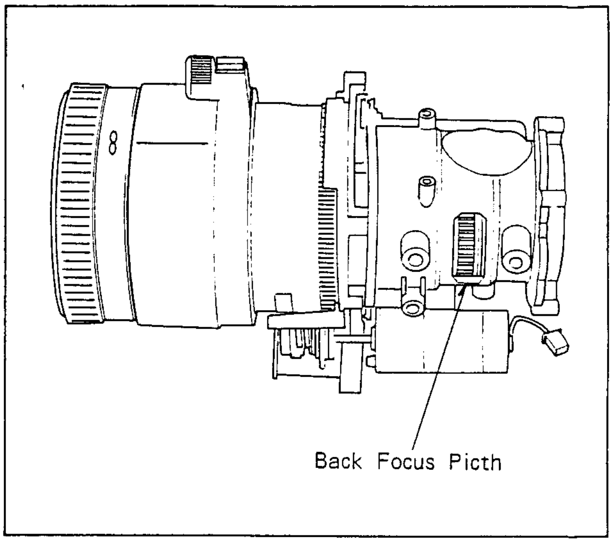

Fig. T12

SERVICE INFORMATION

1-1.HOW TO CHECK THE CRACKED CHIP PART

(1) Apply heat to the soldered portions of chip part using a soldering iron for about 2–3 seconds.

(2) If the chip part is faulty,it will be broken or cracked.

Caution: Do not leave soldering iron on the PCB too long as damage may occur to the PCB or the chip parts.

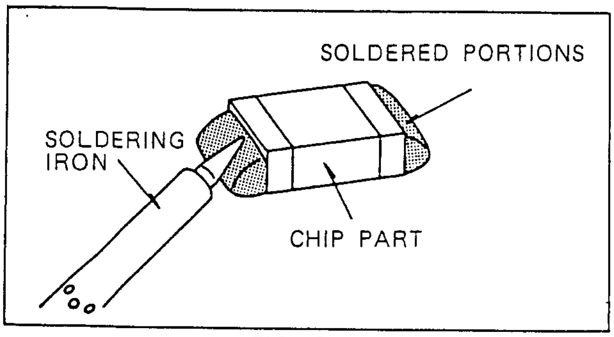
SOLDERED PORTIONS
SOLDERING IRON
CHIP PART

FIG. G1

Note: Regarding intermittent faults
The main causes of these faults are poor soldering and cracked chip parts.

1-2.HOW TO REPLACE THE CHIP PART

1) REMOVAL (RESISTOR, CAPACITOR, etc...)

(1) Presolder the one side of soldering portion for chip part and grasp the chip part by tweezers.

(2) Melt the presoldered portion. And then remove the chip part with a twisting motion while melting the soldering portion of another side quickly.

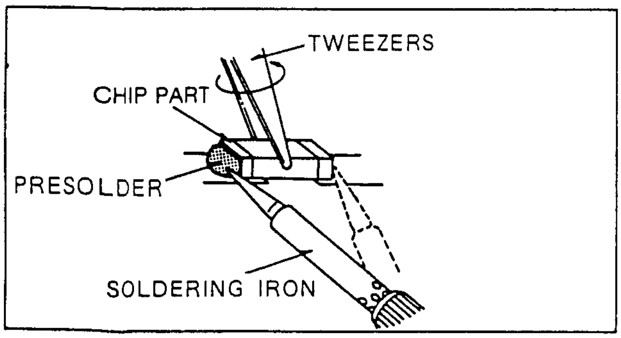
TWEEZERS
CHIP PART
PRESOLDER
SOLDERING IRON

FIG. G2

2) REMOVAL (transistor, diode, etc...)

(1) Grasp the chip part with tweezers and melt the solder of one lead.

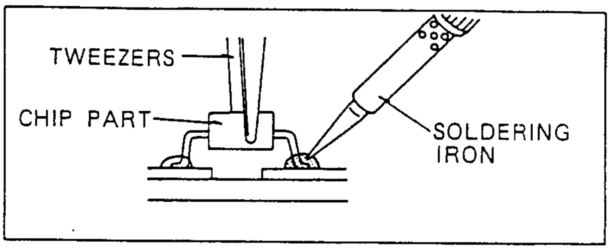
TWEEZERS
CHIP PART
SOLDERING IRON

FIG. G3

(2) Lift the side of that lead upward.

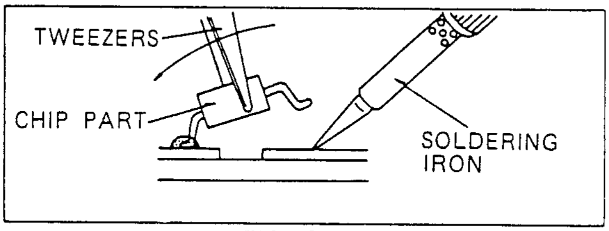
TWEEZERS
CHIP PART
SOLDERING IRON

FIG. G4

Caution: Do not lift the chip part too high as damage may occur to the PCB or the leads that are still soldered on the PCB.

(3) Simultaneously heat the solder of the two remaining leads and lift part to remove.

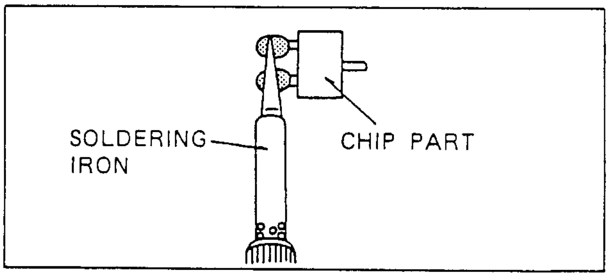
SOLDERING IRON
CHIP PART

FIG. G5

3) INSTALLATION

(1) Presolder the one side of contact point on the circuit board.

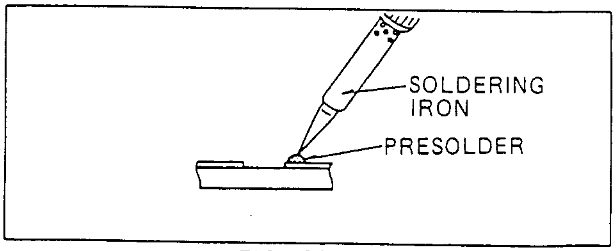
SOLDERING IRON
PRESOLDER

FIG. G6

(2) To install the chip part,hold in position using tweezers, apply heat to the pre-soldered portions using a fine tip soldering iron.
(3) Solder the other side of the chip part.
(4) Check your soldering.

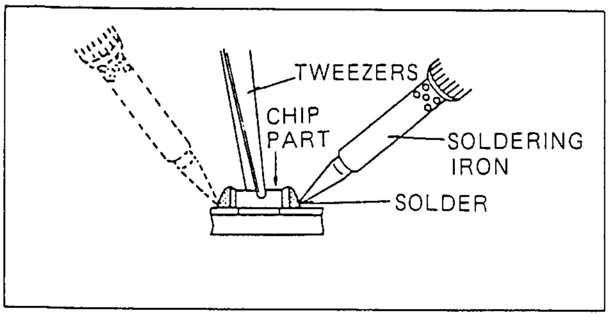
TWEEZERS
CHIP PART
SOLDERING IRON
SOLDER

FIG. G7

1-3.HOW TO REMOVE THE FLAT-IC

(WITH HOT-AIR FLAT-IC DESOLDERING MACHINE)

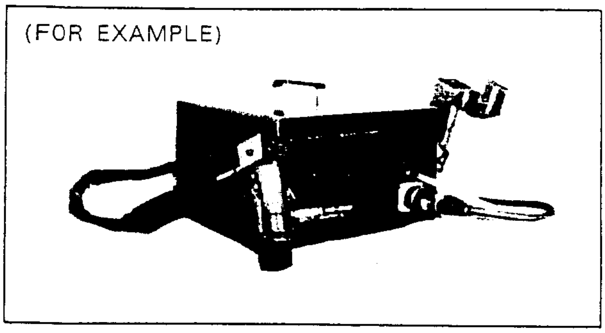
(FOR EXAMPLE)

FIG. G8

(1) Prepare the HOT-AIR FLAT-IC DESOLDERING MACHINE. And then apply hot air to FLAT-IC about 5 ~ 8 seconds.

(2) Remove the FLAT-IC with tweezers while applying the hot air.

Caution: Do not supply the hot air to the chip parts around the Flat-IC for long time as as damage may occur to the chip parts around the Flat -IC.

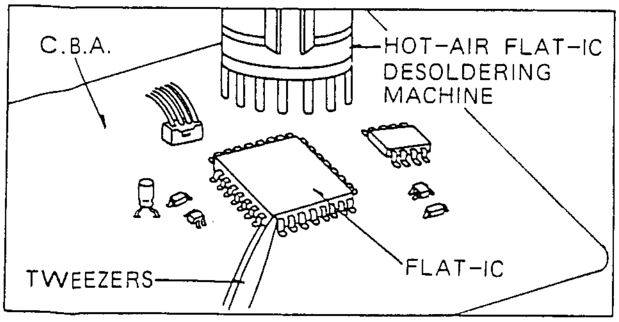
C.B.A.
HOT-AIR FLAT-IC DESOLDERING MACHINE
TWEEZERS
FLAT-IC

FIG. G9

(WITH SOLDERING IRON)

(1) Using solder braid remove the solder from all pins of the Flat-IC.
When you use the solder flux which is applied to all pins of the Flat-IC,you can remove it easily.

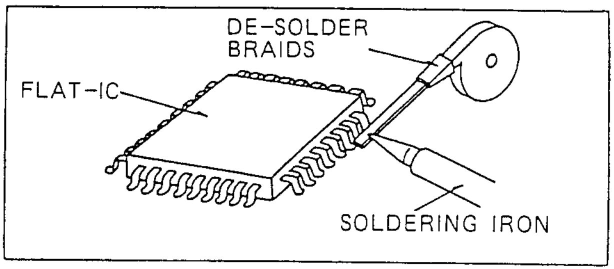
DE-SOLDER BRAIDS
FLAT-IC
SOLDERING IRON

FIG. G10

(2) Lift each lead of the Flat-IC upward one by one using a sharp pin or non solder wire(iron wire),while heating the pins using a fine tip soldering iron or a hot air blower.

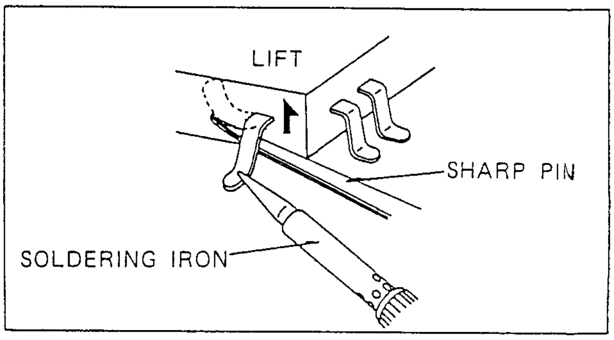
LIFT
SHARP PIN
SOLDERING IRON

FIG. G11

(WITH IRON WIRE)

(1) Affix the wire to workbench or solid mounting point as shown in FIG.G12.
(2) Pull up wire as the solder melts so as to lift the IC lead from the PCB contact pad,while heating the pins using a fine tip soldering iron or hot air blower.

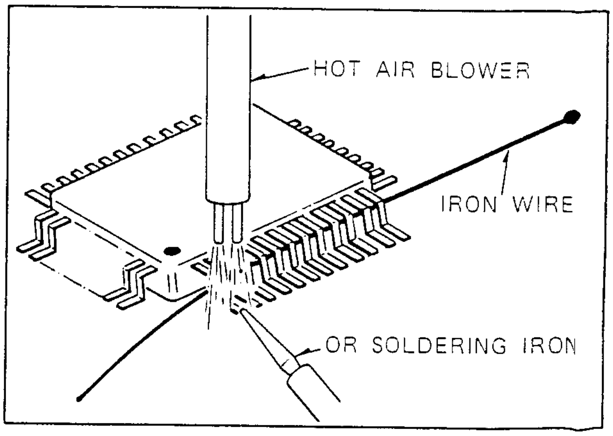
HOT AIR BLOWER
IRON WIRE
OR SOLDERING IRON

FIG.G12

Note: When using a soldering iron care must be taken to ensure that the Flat IC is not being held by glue before it is the PCB may be damaged if force is used.

MEMO

VHS-Camcorder VKR6855/00/01

Service
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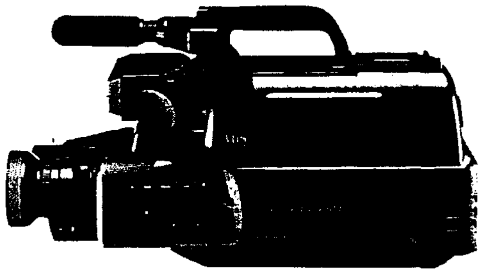
Service



Service Manual

SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: BATTERY; DC 12V Consumption; Recording mode; 8.7W (Battery operation)
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7mm)
TAPE SPEED	23.39mm/s Record/Playback Time 24min. with NV-E240 FF/REW Time less than 12min. with NV-E180
CAMERA	Pick-up Element: CCD (Charge Coupled Device)
	Standard Illumination: 1,400 lux
	Minimum Required Illumination: 10 lux
	Lens: Built-in 8 : 1, Power Zoom Lens with MACRO Function, Auto Iris, Auto Focus System, F1.2 (8.5~68mm), Lens Front Diameter/ϕ49mm
	View Finder: 2/3" Electric View Finder
VIDEO	Heads: 4 rotary heads, 1 flying erase head
	Input: ADAPTOR (10P); Y signal, $1.75^{+0.5}_{-0.2}$Vp-p 1.5kΩ DC 1.95±0.2V C Burst signal, 500±75mVp-p (RED/BURST 1.75±0.3Vp-p) 22kΩ DC 1.75±0.2V
	Output: (PHONO Type); 1.0Vp-p 75Ω unbalanced

ITEM	SPECIFICATION
AUDIO	Head: 1 Stationary head (Normal Audio)
	Input: ADAPTOR (10P); −10dB, 47kΩ unbalanced MIC IN (M3); −70dB, 4.7kΩ unbalanced
	Output: (PHONO Type); −8dB 600Ω unbalanced Head Phone (M3); −21dB, 32Ω unbalanced
WEIGHT	Approx. 2.7kg (without Battery Pack)
DIMENSIONS	134(W) × 228.8(H) × 429(D)mm
STANDARD ACCESSORIES	1 pc. AV Output Cable 1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Shoulder Strap 1 pc. Battery for Clock 1 pc. Cassette Tape 1 pc. DC Input Cable 1 pc. System Carrying Case 1 pc. Battery Pack Charging Connector 1 pc. RF Adaptor 1 pc. Power Plug Adaptor

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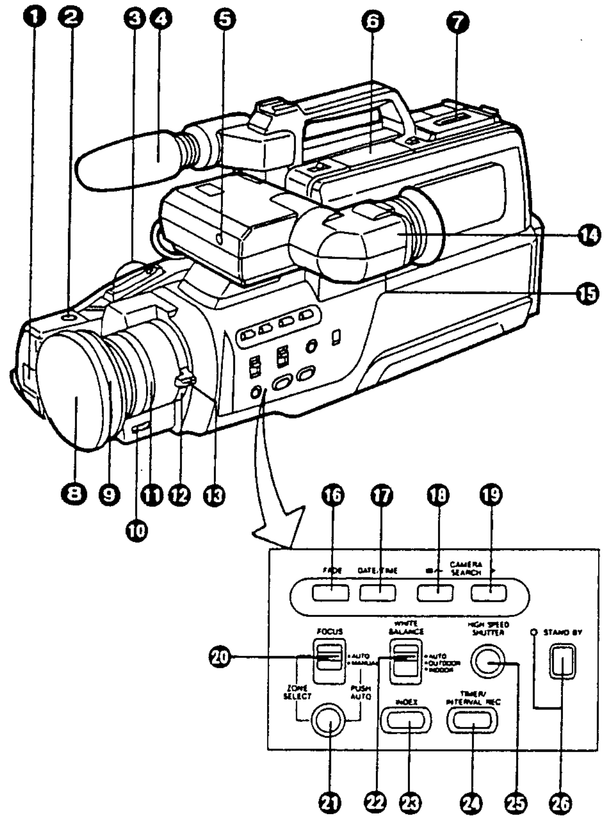
SECTION 1
GENERAL DESCRIPTION

1-1. CONTROLS AND COMPONENTS

RIGHT VIEW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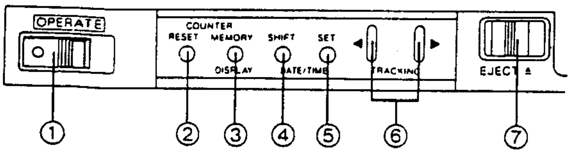
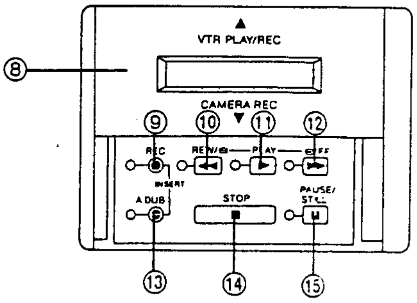
⓱
⓲
⓳
FADE
DATE/TIME
CAMERA SEARCH
FOCUS
• AUTO
• MANUAL
WHITE BALANCE
• AUTO
• OUTDOOR
• INDOOR
HIGH SPEED SHUTTER
STAND BY
ZONE SELECT
PUSH AUTO
INDEX
TIMER/ INTERVAL REC
⓴
㉑
㉒
㉓
㉔
㉕
㉖

❶ White Balance Sensor Window
❷ Start/Stop Button
❸ Power Zoom Control Button
❹ Built-in Microphone
❺ Tally Indicator
❻ General Operation Controls


OPERATE
COUNTER
RESET
MEMORY
SHIFT
SET
DISPLAY
DATE/TIME
TRACKING
EJECT ▲
①
②
③
④
⑤
⑥
⑦

① Operation On/Off Switch
② Reset Button
③ Memory Button
④ Date Shift Buton
⑤ Date Set Button
⑥ Tracking Adjust Buttons
⑦ Eject Switch

❼ Tape Running Buttons


▲
VTR PLAY/REC
⑧
CAMERA REC
▼
⑨
⑩
⑪
⑫
REC
REW/
PLAY
FF
INSERT
A DUB
STOP
PAUSE/ STILL
⑬
⑭
⑮

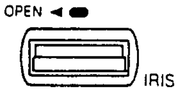
⑧ Camera/VTR Operation Selector Cover

Closed .... For camera recording.
Open (as illustrated) .... For other operations than camera recording.

⑨ Record Button
⑩ Rewind/Review Button
⑪ Play Button
⑫ Fast Forward/Cue Button
⑬ Audio Dubbing Button
⑭ Stop Button
⑮ Pause/Still Button

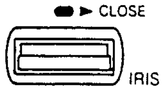
❽ Lens Cap
❾ Lens Hood
❿ Iris Close/Open Control

When a Subject is backlit:
Turn in the "OPEN" direction.



- When shooting a backlit subject, be careful that the lens is not aimed at extremely bright light.

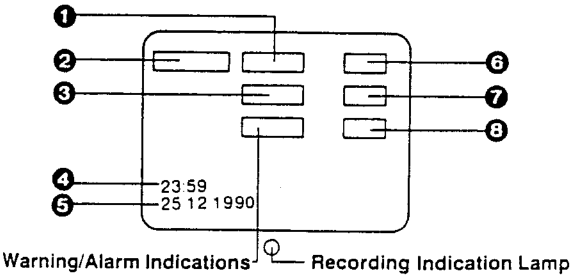
When the picture is too bright:
Turn in the "CLOSE" direction.



- For normal lighting conditions, this control should be set to the centre detent position. (Automatic adjustment)

⑪ Focus Ring
⑫ Zoom Ring
⑬ Manual Zoom Lever with Macro Button
⑭ Electronic Viewfinder

The following indications are displayed in the Electronic Viewfinder (EVF) to inform you of the operating conditions of the VHS Movie.



BATT	There is little battery power left. The VHS Movie will be turned off in a few minutes. Replace the battery pack by a fully recharged one.
TAPE	It is impossible to record because the erasure prevention tab of the cassette is not intact.
END	During recording, the tape has reached its end. Replace the tape with a new one.
DEW	When condensation has formed inside the VHS Movie, the "DEW" indication will flash and a few seconds later, the unit will turn itself off.
⊗	Video Head Clogging (see page 40).

① Remaining Battery Power/Index Indication

E----F	The "▬" indications begin to disappear from right to left as the power of the battery pack weakens.
INDEX	This indicator flashes when a recording is started or when the Index Signal Recording Button is pressed and it indicates that an index signal is being recorded.

② Self-Timer/Interval Indication

SELF-20S	Self-timer recording for 20 secondes.
SELF-END	Self-timer recording until the end of the tape.
INTERVAL	Recordings of approx. 1 second will be made at 1-minute intervals for up to 10 hours.

③ Counter Indication

M0123	Tape Counter
0:12.34	Lap Time Counter

④ Clock Indications

⑤ Date Indications

⑥ Camera Mode Indication

PAUSE	Recording Pause, Rec Review
REC	Recording
◁ ◁	Camera Search (In reverse direction)
▷	Camera Search (In forward direction)

VTR Mode Indication

◁ ◁	Rewind/Review
▷ ▷	Fast Forward/Cue
▷	Play
II	Still
INST▷	Insert
INSTII	Insert Pause
A.DUB▷	Audio Dubbing
A.DUBII	Audio Dubbing Pause
REC▷	Recording
RECII	Recording Pause

⑦ High Speed Shutter Mode Indication

1/500	1/500 sec.
1/1000	1/1000 sec.

⑧ Manual White Balance Indication

OUT	OUTDOOR
IN	INDOOR

- Some of the above indications may light up alternately at the same place in the EVF to indicate the corresponding operating condition or warning.

⑮ Eyepiece Corrector Control
⑯ Fade Button
⑰ Date/Time Selector
⑱ Camera Search (−)/Rec Review Button

Camera Search for checking
longer recorded scenes.

Rec Review for a quick check
of the end of a recorded scene.

Camera Search Function
In the recording pause mode, a recorded scene can be played back at high speed in reverse direction by keeping the Camera Search (−) Button pressed (sound is not reproduced). And it can then be played back at normal speed in forward direction by keeping the Camera Search (+) Button pressed.

When the button is released, the VHS Movie will return to recording pause mode.

Rec Review Function
Press the Rec Review Button whilst the VHS Movie is in the recording pause mode.

- The last 2 seconds of the recorded scene will be played back and the VHS Movie will again stop in the recording pause mode, ready for further recording.

⑲ Camera Search (+)/Button
⑳ Focus Mode Selector
㉑ Focus Adjusting Button/Zone Selector
㉒ White Balance Mode Selector
㉓ Index Signal Recording Button

Notes about Recording the Index Signal (VISS)
The recording of index signals at the beginning of and during recordings makes possible the use of the VHS Index Search or the Intro Scan function when playing back the tape on a VTR equipped with the VISS function.
An index signal is recorded when one of the following operations is performed.

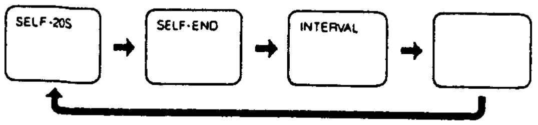
- When recording is started for the first time after the VHS Movie is turned on.
- When recording is restarted after the cassette is exchanged or the tape is played back.
- When the Index Signal Recording Button is pressed during recording.

In each of these cases, the "INDEX" indication will flash for a few seconds in the EVF.

- When recording index signals, space the signals at least 2 minutes.

㉔ Timer/Interval Recording Button

■ **Pressing the Timer/Interval Recording Button repeatedly:**



- Depending on the TV set used, the top of the picture may become distorted when playing back scenes shot with the interval recording function.

Self-Timer Recording

10 Seconds after the self-timer function is activated on the VHS Movie, the recording will start.

If the VHS Movie is mounted on a tripod, this handy function allows the person behind the camera to join the action that is being recorded.

❶ Press the Timer/Interval Recording Button during recording pause to select the desired recording mode.
- When the Timer/Interval Recording Button is pressed once, "SELF-20S" will appear in the EVF, and when the button is pressed twice, "SELF-END" will appear in the EVF.

❷ Press the Start/Stop Button and the self-timer recording will start 10 seconds later.
- When "SELF-20S" is indicated, the recording will be made for 20 seconds.
  When "SELF-END" is indicated, the recording will be made until the tape reaches its end.

To stop the Self-Timer Recording Midway

Press the Start/Stop Button, and the self-timer recording will be cancelled.

Interval Recording

This recording function automatically makes recordings of approx. 1 second duration at 1-minute intervals. (However, the initial recording will last for about 10 seconds.) The interval recording will continue for a maximum of 10 hours, after which the VHS Movie will turn itself off.

❶ Press the Timer/Interval Recording Button three times during recording pause mode.

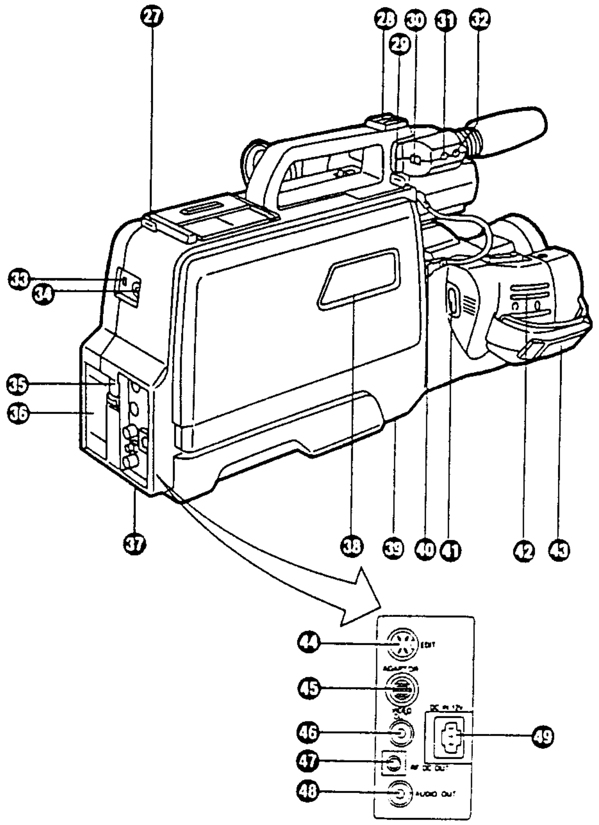
❷ Press the Start/Stop Button.

To stop the Interval Recording Midway

Press the Start/Stop Button, and the interval recording will be cancelled.

㉕ High Speed Shutter Selector
㉖ Standby Button with Indicator

LEFT VIEW



㉗ Metal Fitting for Shoulder Strap
㉘ Accessory Shoe
㉙ Metal Fitting for Shoulder Strap
㉚ Microphone Sensitivity Selector
㉛ Earphone Socket
㉜ External Microphone Socket
㉝ Edit Switch
㉞ Remote Control Socket
㉟ Battery Eject Button
㊱ Battery Compartment
㊲ Battery Compartment for Auto Date/Clock
㊳ Cassette Compartment
㊴ Tripod Receptacle
㊵ EVF/Character Generator Terminal
㊶ Start/Stop Button
㊷ Handgrip
㊸ Grip Belt
㊹ Edit Socket
㊺ Adaptor Socket
㊻ Video Output Socket
㊼ RF DC Output Socket
㊽ Audio Output Socket
㊾ DC Input Socket

MEMO

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps for the cabinet parts and the P.C boards in order to find the items necessary for servicing.
When reassembling perform the steps in the reverse order.

Note:

(1) When removing the cabinet, work with care so as not to break the locking tabs.
(2) Place a cloth or some other soft material under the P.C. boards or Unit to prevent damage.
(3) When re–installing, ensure that the connectors are connected and electrical components have not been damaged.
(4) Do not supply power to the Unit during disassembly.

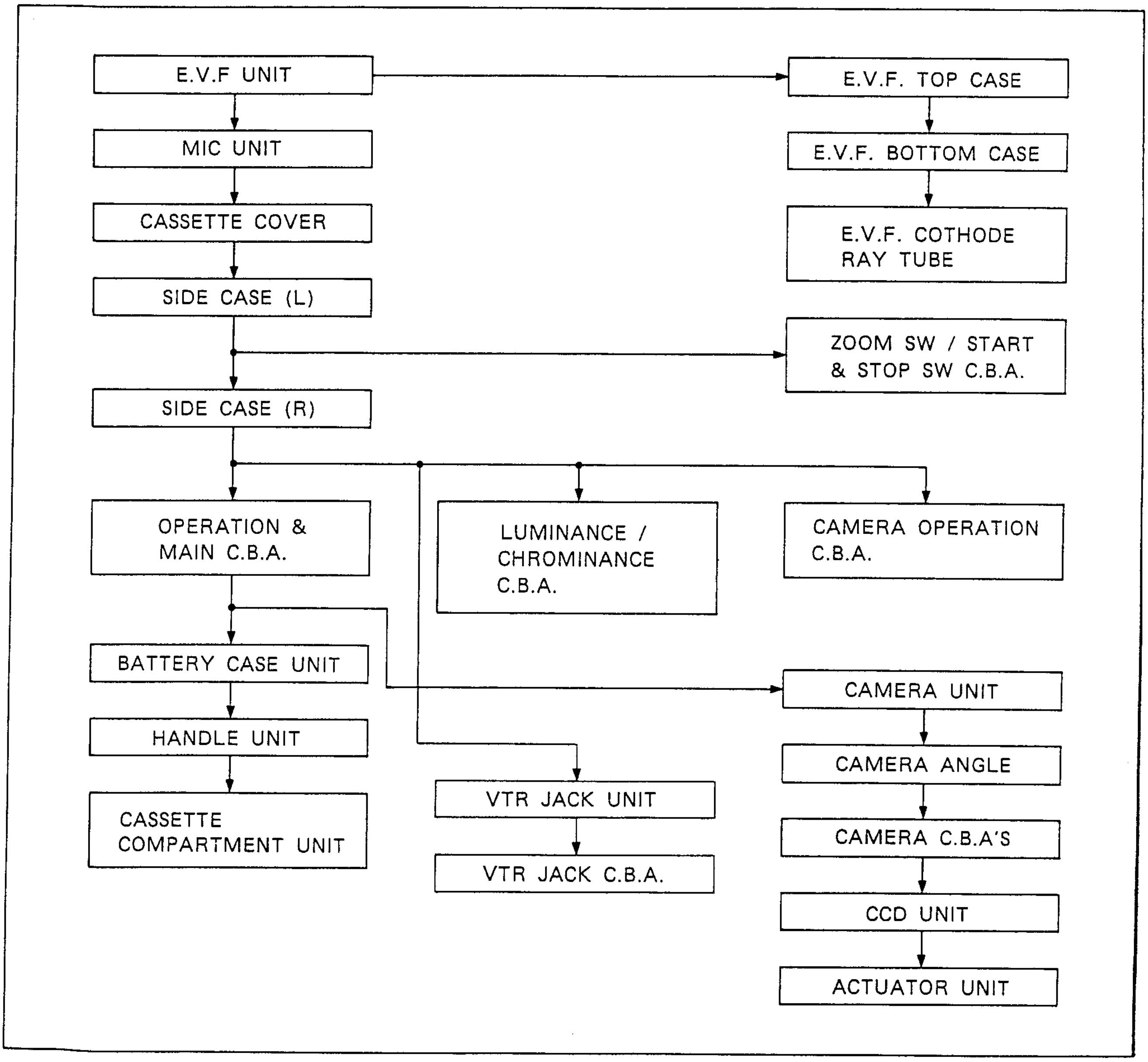

E.V.F UNIT
MIC UNIT
CASSETTE COVER
SIDE CASE (L)
SIDE CASE (R)
E.V.F. TOP CASE
E.V.F. BOTTOM CASE
E.V.F. COTHODE RAY TUBE
ZOOM SW / START & STOP SW C.B.A.
OPERATION & MAIN C.B.A.
LUMINANCE / CHROMINANCE C.B.A.
CAMERA OPERATION C.B.A.
BATTERY CASE UNIT
HANDLE UNIT
CASSETTE COMPARTMENT UNIT
VTR JACK UNIT
VTR JACK C.B.A.
CAMERA UNIT
CAMERA ANGLE
CAMERA C.B.A'S
CCD UNIT
ACTUATOR UNIT

Fig. D1

2-1-2. DETAILED DISASSEMBLY METHOD

1. REMOVAL OF E.V.F. UNIT

(1) Remove the E.V.F. Unit connector.
(2) Slide the E.V.F. Unit in the direction shown by the arrow.
(3) Remove the E.V.F. Unit while pushing on the Locking Lever on the bottom of the Unit.

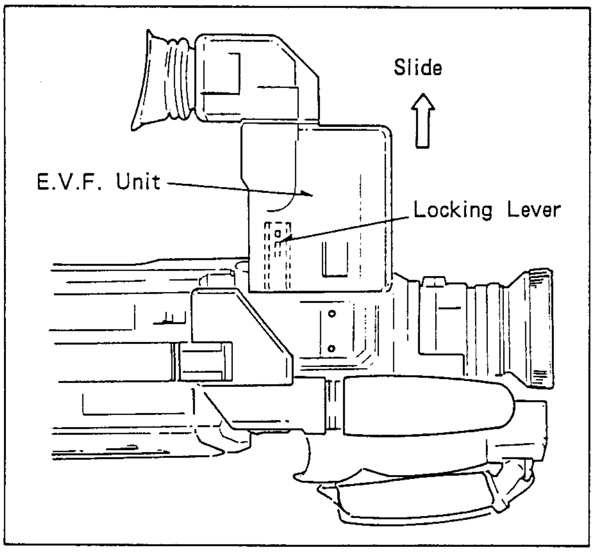

Slide
E.V.F. Unit
Locking Lever

Fig. D2

2. REMOVAL OF MIC UNIT

(1) Remove 2 Screws (A) and (B).
(2) Slide the MIC Unit in the direction shown by the arrow.
(3) D isconnect the connector on the MIC Unit.

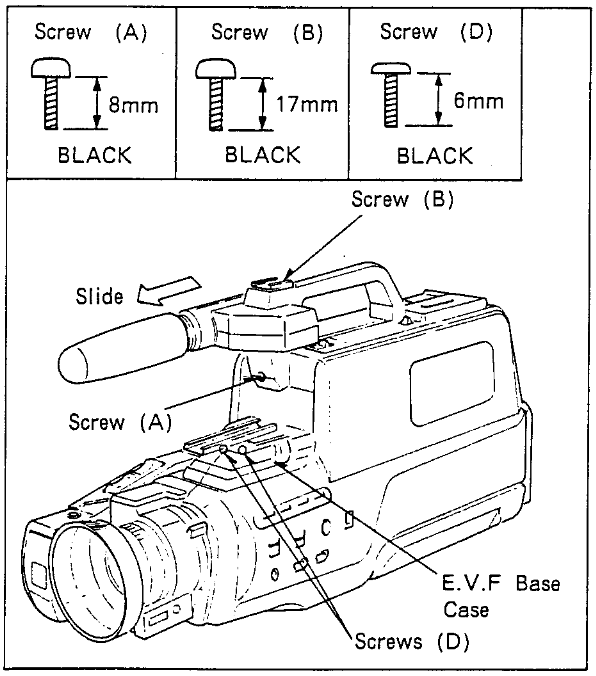

Screw (A)
8mm
BLACK
Screw (B)
17mm
BLACK
Screw (D)
6mm
BLACK
Screw (B)
Slide
Screw (A)
E.V.F Base Case
Screws (D)

Fig. D3

3. REMOVAL OF CASSETTE COVER

(1) Remove 2 Screws (C).
(2) Pull the Cassette Cover straight up to remove.

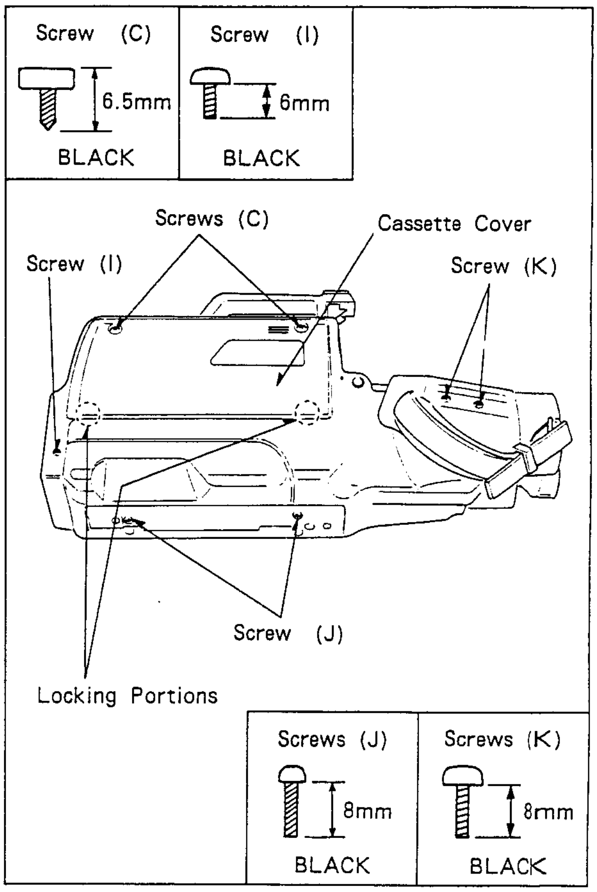

Screw (C)
6.5mm
BLACK
Screw (I)
6mm
BLACK
Screws (C)
Cassette Cover
Screw (I)
Screw (K)
Screw (J)
Locking Portions
Screws (J)
8mm
BLACK
Screws (K)
8mm
BLACK

Fig. D4

Note:

Be carefull not to damage the Locking Portions when removing or realigning the Cassette Cover.

4. REMOVAL OF SIDE CASE (R) UNIT

(1) Remove 2 Screws (D) shown in Fig. D3.
(2) Remove the E.V.F. Base Case.
(3) Remove 2 Screws (E), 2 Screws (F), 2 Screws (G) and Screw (H).
(4) Lift the Side Case (R) Unit slightly. Then disconnect 4 Connectors on the Side Case (R) Unit.

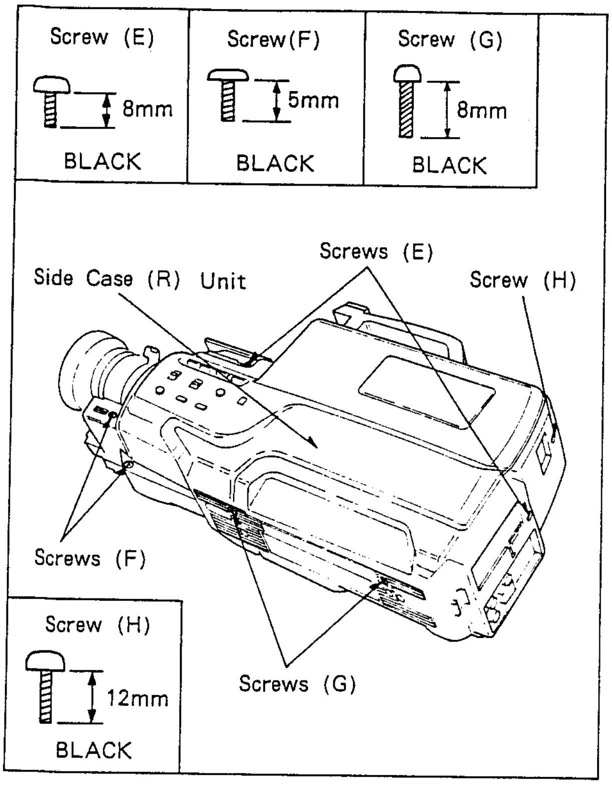

Screw (E)
8mm
BLACK
Screw(F)
5mm
BLACK
Screw (G)
8mm
BLACK
Screws (E)
Side Case (R) Unit
Screw (H)
Screws (F)
Screw (H)
12mm
BLACK
Screws (G)

Fig. D5

5. REMOVAL OF SIDE CASE (L) UNIT

(1) Remove Screw (I), 2 Screws (J) and 2 Screws (K) shown in Fig. D4.
(2) Remove the Lens Hood and then remove Screw (L) shown in Fig. D6.
(3) Lift the Side Case (L) Unit slightly. Then disconnect the Connector.

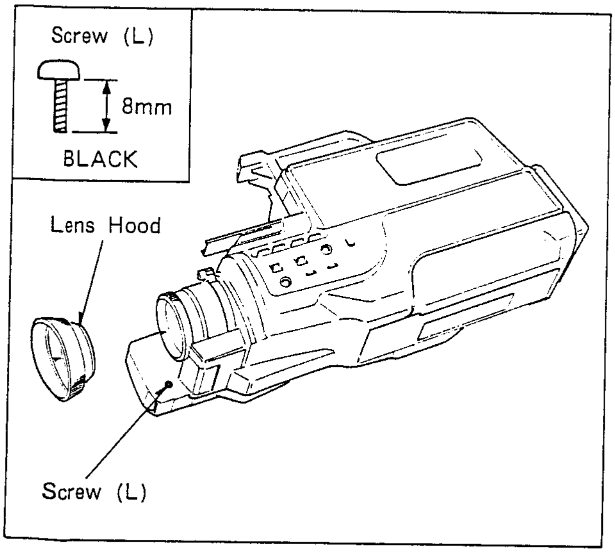

Screw (L)
8mm
BLACK
Lens Hood
Screw (L)

Fig. D6

6. REMOVAL OF OPERATION PANEL UNIT

(1) Unlock 4 Locking Tabs (M).
(2) Lift the Operation Panel Unit up slightly.

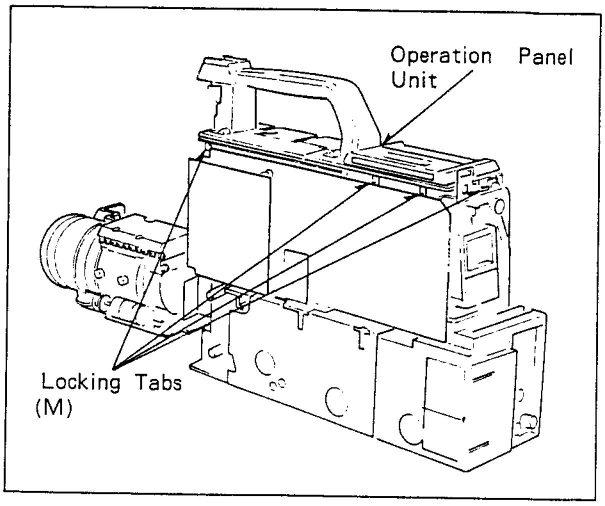

Operation Panel Unit
Locking Tabs (M)

Fig. D7

7. OPENING OF OPERATION/MAIN C.B.A.

(1) Remove 2 Screws (N) and then unsnap 5 Locking Tabs (O).
(2) Open the Operation / Main C.B.A. slightly.
(3) Disconnect the Connector P6016 on Main C.B.A.

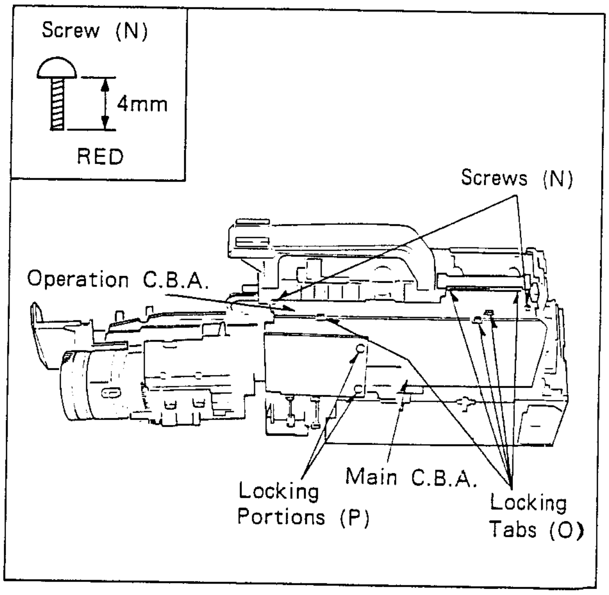

Screw (N)
4mm
RED
Screws (N)
Operation C.B.A.
Main C.B.A.
Locking Portions (P)
Locking Tabs (O)

Fig. D8

8. OPENING OF LUMINANCE/CHROMINANCE C.B.A.

(1) Unlock the Locking Portions (P) shown in Fig. D8 and then open the Luminance / Chrominance C.B.A. slightly.

9. REMOVAL OF CAMERA OPERATION C.B.A.

(1) Remove 4 Screws (R) and 2 Screws (S).
(2) Unsnap 5 Locking Tabs (T) and then lift the Camera Operation C.B.A. up slightly.

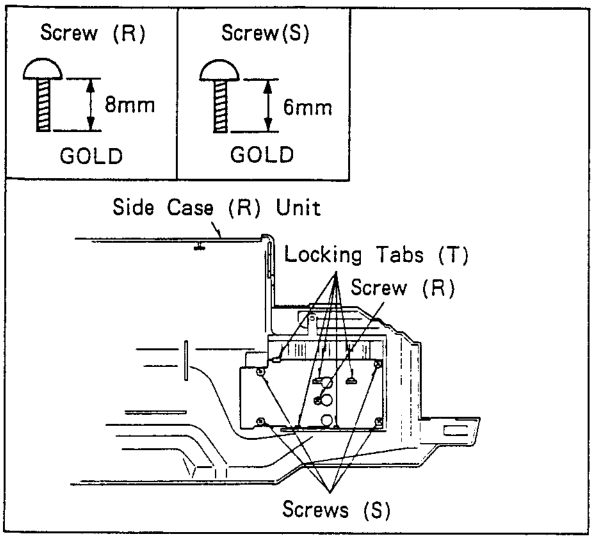

Screw (R)
8mm
GOLD
Screw(S)
6mm
GOLD
Side Case (R) Unit
Locking Tabs (T)
Screw (R)
Screws (S)

Fig. D9

10. REMOVAL OF START/STOP SW C.B.A. AND ZOOM SW C.B.A.

(1) Remove 2 Screws (U) and Screw (V).
(2) Unlock 4 Locking Portions (W) and then remove the Grip Unit slightly.

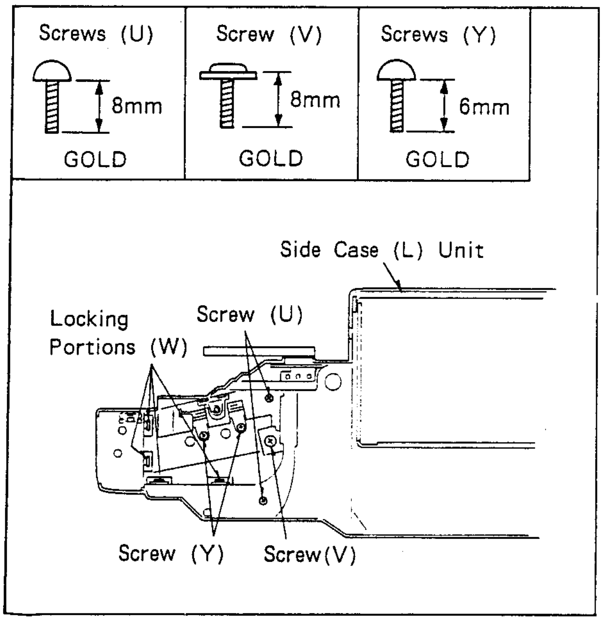

Screws (U)
8mm
GOLD
Screw (V)
8mm
GOLD
Screws (Y)
6mm
GOLD
Side Case (L) Unit
Locking Portions (W)
Screw (U)
Screw (Y)
Screw(V)

Fig. D10

(3) Unlock the Locking Portion (X) and then lift the Start/Stop SW C.B.A. up slightly.
(4) Remove 2 Screws (Y) shown in Fig. D10 and then remove the Zoom SW Unit.
(5) Unlock 2 Locking Portions (Z) and then lift the Zoom Button up slightly.
(6) Remove the Zoom SW C.B.A.

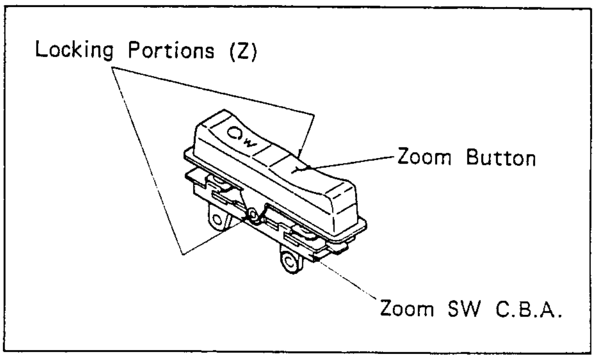

Locking Portions (Z)
Zoom Button
Zoom SW C.B.A.

Fig. D11

11. OPENING OF BATTERY CASE UNIT

(1) Open the Operation/Main C.B.A. shown in Fig. D12.
(2) Remove 3 Screws (a) and 2 Screws (b). Then lift the Battery Case Unit slightly in order to release it from 2 Locking Pins (c).
(3) Loosen wires located around the Battery Case Unit.

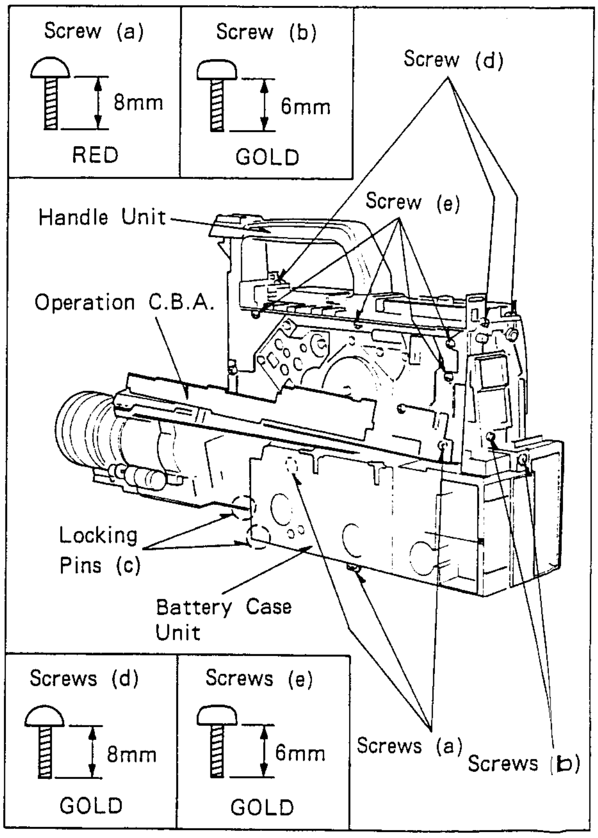

Screw (a)
8mm
RED
Screw (b)
6mm
GOLD
Screw (d)
Screw (e)
Handle Unit
Operation C.B.A.
Locking Pins (c)
Battery Case Unit
Screws (d)
8mm
GOLD
Screws (e)
6mm
GOLD
Screws (a)
Screws (b)

Fig. D12

12. REMOVAL OF HANDLE UNIT

(1) Remove 4 Screws (d) and 3 Screws (e) shown in Fig. D12.
(2) Remove the Handle Unit.

13. REMOVAL OF CASSETTE COMPARTMENT UNIT

(1) Remove 4 Screws (f) and then remove the Cassette Compartment Unit.

Note:

When re-installing the Cassette Compartment Unit, install it in the closed (cassette down) condition.

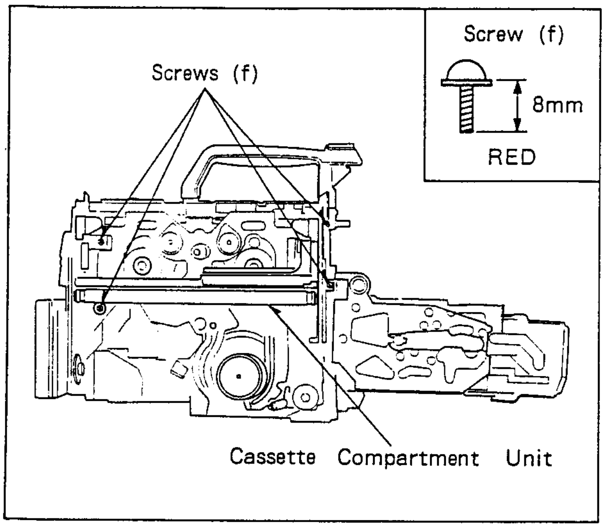

Screw (f)
8mm
RED
Screws (f)
Cassette Compartment Unit

Fig. D13

14. REMOVAL OF CAMERA UNIT

(1) Remove 2 Screws (g).
(2) Disconnect the Connector P3804 and Flexible Connector P3802 on Main C.B.A.

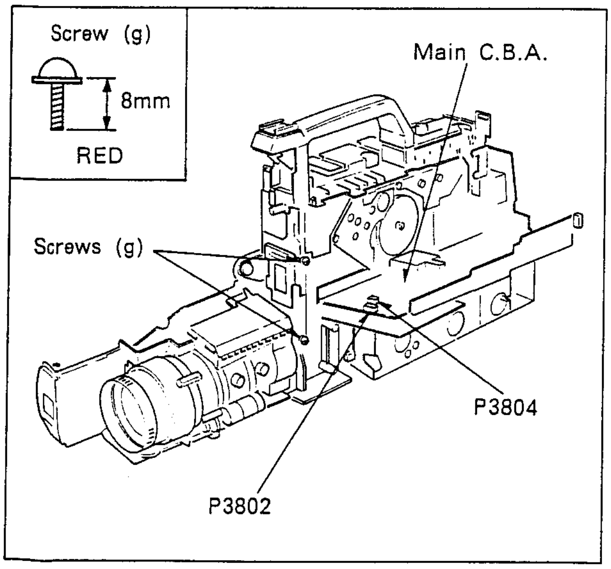

Screw (g)
8mm
RED
Main C.B.A.
Screws (g)
P3804
P3802

Fig. D14

15. REMOVAL OF CAMERA ANGLE

(1) Remove 2 Screws (h) and Screw (i).
(2) Remove the Camera Angle.

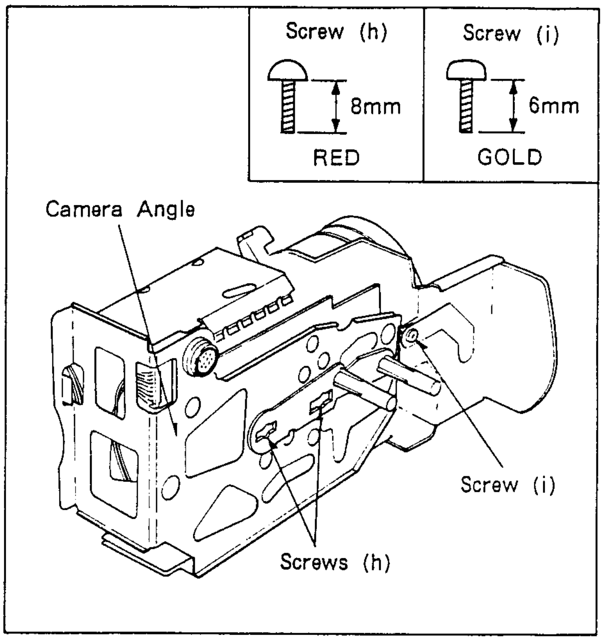

Screw (h)
8mm
RED
Screw (i)
6mm
GOLD
Camera Angle
Screw (i)
Screws (h)

Fig. D15

16. REMOVAL OF AWT CASE UNIT

(1) Remove 2 Screws (j), Screw (k) and Screw (l).
(2) Remove the AWT Case Unit.

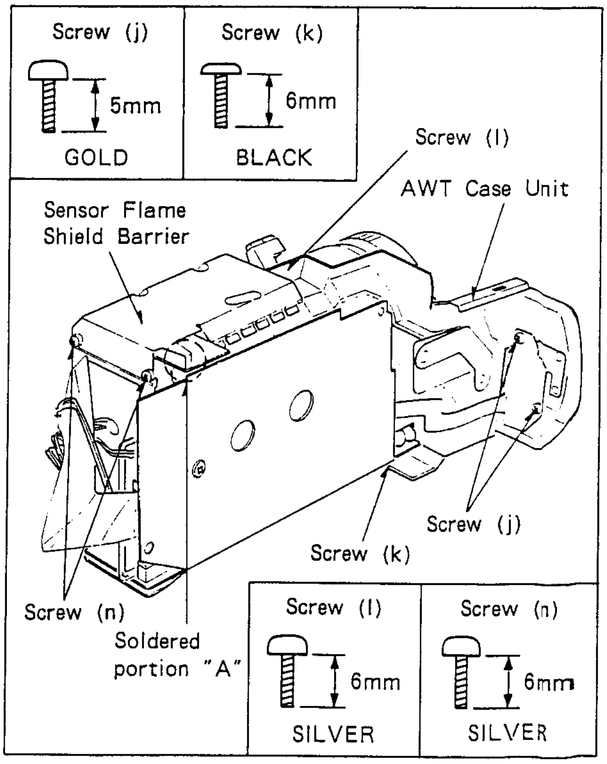

Screw (j)
5mm
GOLD
Screw (k)
6mm
BLACK
Screw (l)
AWT Case Unit
Sensor Flame Shield Barrier
Screw (j)
Screw (k)
Screw (n)
Soldered portion "A"
Screw (l)
6mm
SILVER
Screw (n)
6mm
SILVER

Fig. D16

17. REMOVAL OF CAMERA C.B.A.

(1) Remove 5 Screws (m) on Auto Focus and Process C.B.A's.
(2) Disconnect Connectors B301, B305.
(3) Lift the Process C.B.A. up slightly and then disconnect the flexible wire FP310 on Process C.B.A.
(4) Remove the Process C.B.A.
(5) Disconnect Connectors P701, P702, P704 and P705 on Auto Focus C.B.A.
(6) Remove the Auto Focus C.B.A.

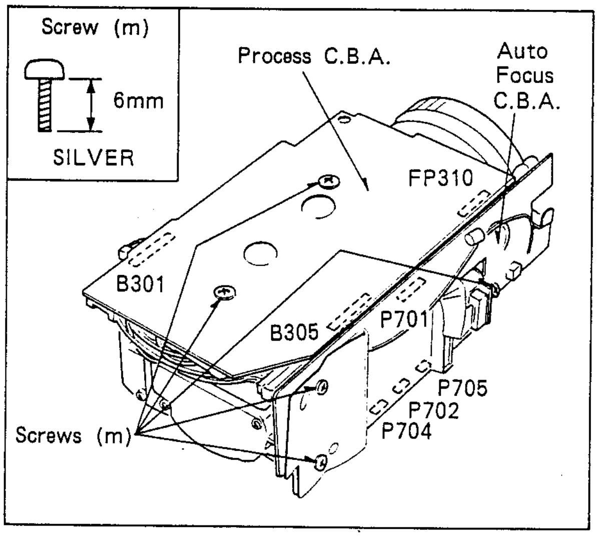

Screw (m)
6mm
SILVER
Process C.B.A.
Auto Focus C.B.A.
FP310
B301
B305
P701
P705
P702
P704
Screws (m)

Fig. D17

18. REMOVAL OF SENSOR C.B.A.

(1) Remove 2 Screws (n) shown in Fig. D16 .
(2) Using soldering iron remove the solder from solder portion "A" , and then remove the sensor frame Shield Barrier.
(3) Remove 2 Screws (o).
(4) Lift the Sensor C.B.A. up slightly and then disconnect the Flexible Wire FP201 on Sensor C.B.A.

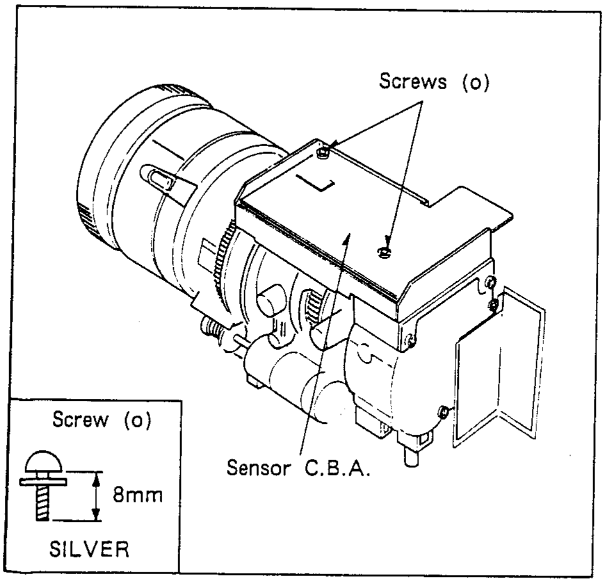

Screws (o)
Screw (o)
8mm
SILVER
Sensor C.B.A.

Fig. D18

19. REMOVAL OF CCD UNIT

(1) Remove 3 Screws (p) and Screw (g).
And Then remove the Sensor C.B.A. Flame.
(2) Remove 2 Screws (r) and then remove the Sensor Flame.

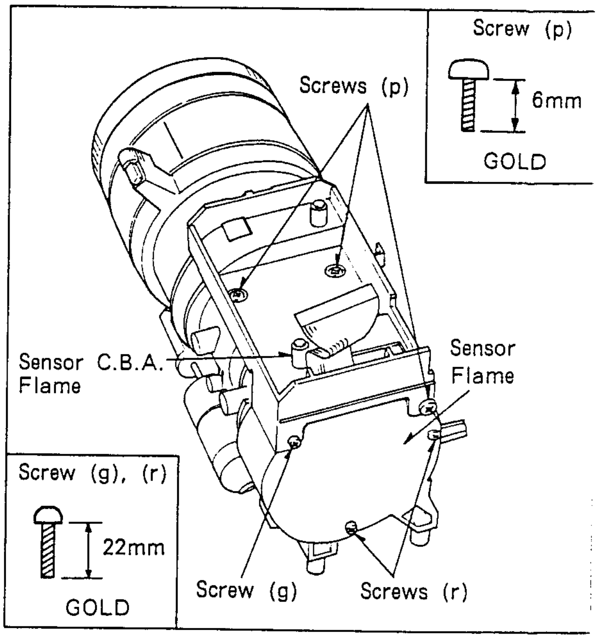

Screw (p)
6mm
GOLD
Screws (p)
Sensor C.B.A. Flame
Sensor Flame
Screw (g), (r)
22mm
GOLD
Screw (g)
Screws (r)

Fig. D19

(3) Remove 2 Screws (s) and then remove the CCD Unit.

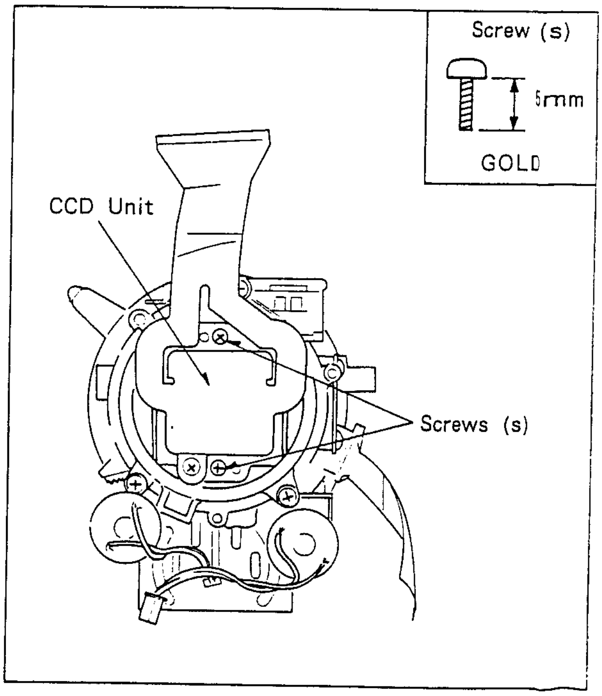

Screw (s)
5mm
GOLD
CCD Unit
Screws (s)

Fig. D20

20. REMOVAL OF ACTUATOR UNIT

(1) Remove 3 Screw (t) and then remove the Actuator Unit.

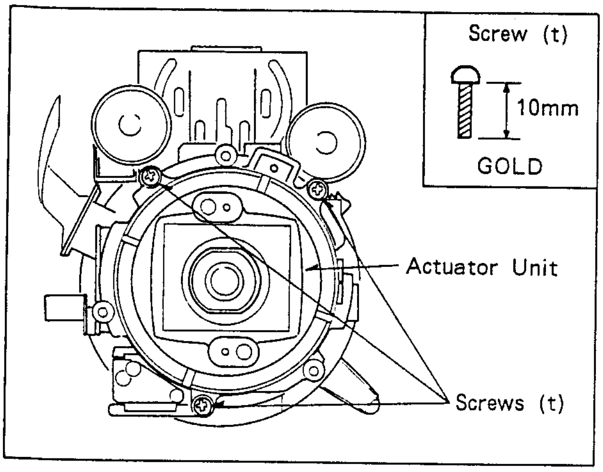

Screw (t)
10mm
GOLD
Actuator Unit
Screws (t)

Fig. D21

21. DISASSEMBLY OF E.V.F. UNIT

(1) Remove 3 Screws (u) on the bottom of the E.V.F. Unit and then remove the Bottom Case.

(2) Remove CRT Top Case from CRT Bottom Case shown in Fig. D22.

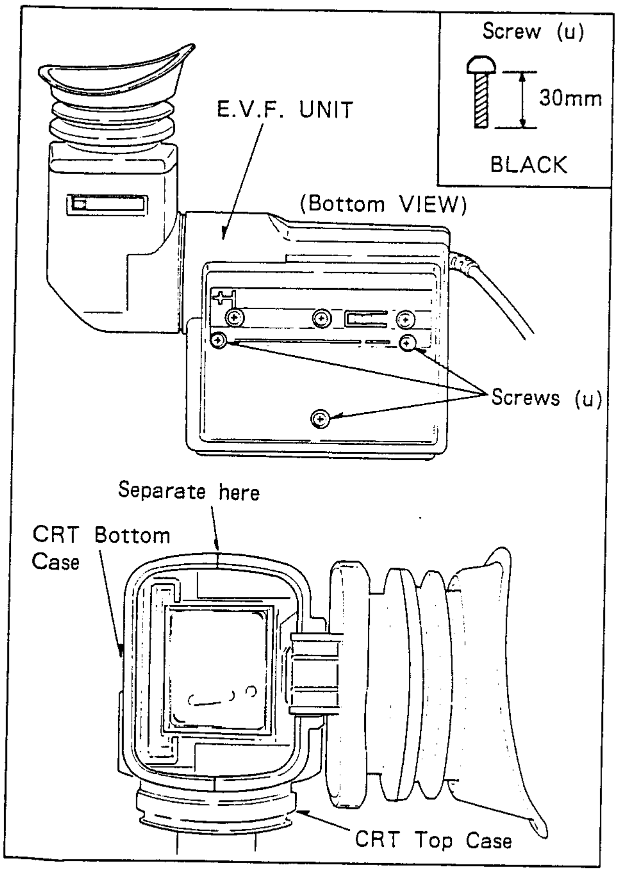

Screw (u)
30mm
BLACK
E.V.F. UNIT
(Bottom VIEW)
Screws (u)
Separate here
CRT Bottom Case
CRT Top Case

Fig D22

(3) Lift the CRT Assembly up shown in Fig. D23.

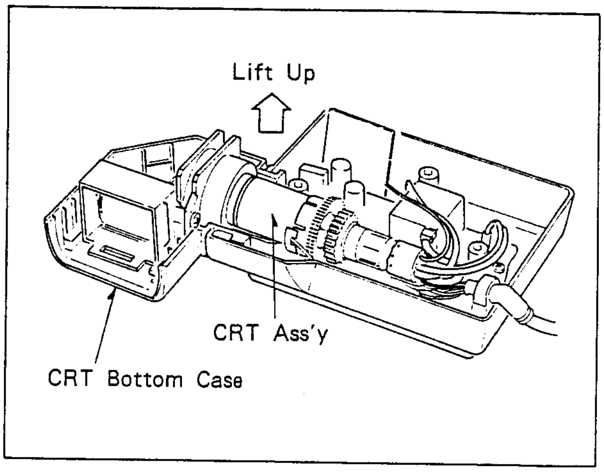

Lift Up
CRT Ass'y
CRT Bottom Case

Fig. D23

(4) Rotate Nut (v) and then pull DY Assembly in the direction shown in Fig. D24 to remove it. Then the CRT can be replaced.

(5) For re-installation, reverse the above steps.

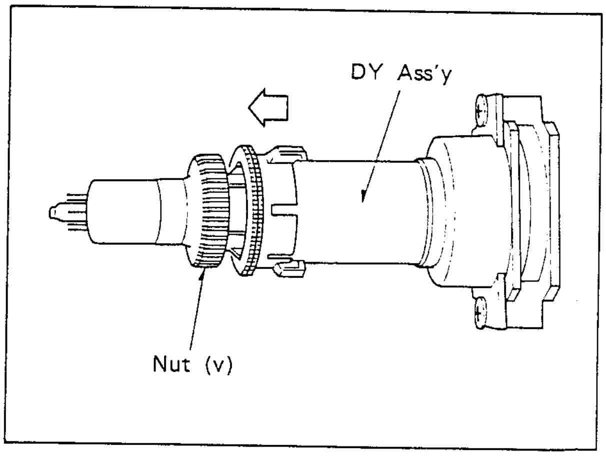

DY Ass'y
Nut (v)

Fig. D24

22. REMOVAL OF VTR JACK UNIT

(1) Remove 2screws (w) show in Fig.D25.

(2) Disconnect Connectors P4901, P4901, P4904, P4906 and P4934 on VTR JACK UNIT.

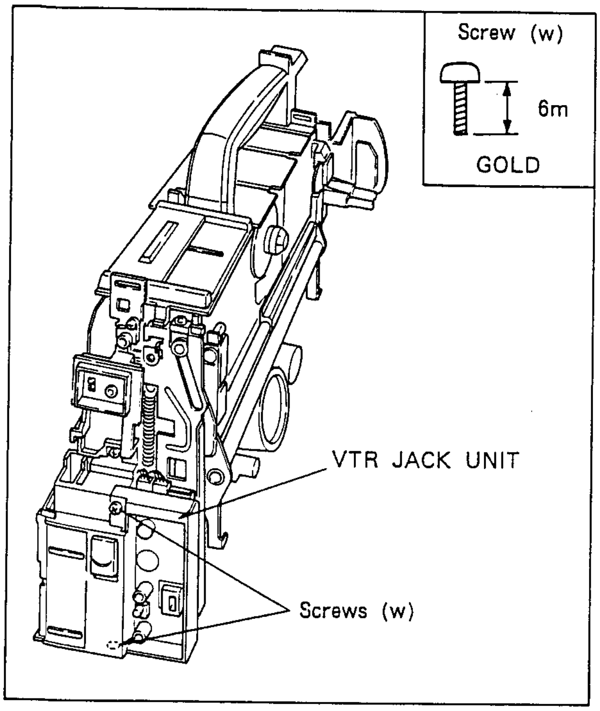

Screw (w)
6m
GOLD
VTR JACK UNIT
Screws (w)

Fig. D25

23. REMOVAL OF VTR JACK C.B.A.

(1) Using Soldering Iron remove the solder from EDIT pins (5pins), ADAPTOR pins (10pins), VIDEO pins (2pins), RF DC OUT pins(3pins), AUDIO pins (2pins) and DC IN 12V pins (5pins) on the VTR JACK C.B.A.
(2) Remove 2 screws (x).
(3) Remove the VTR JACK C.B.A.

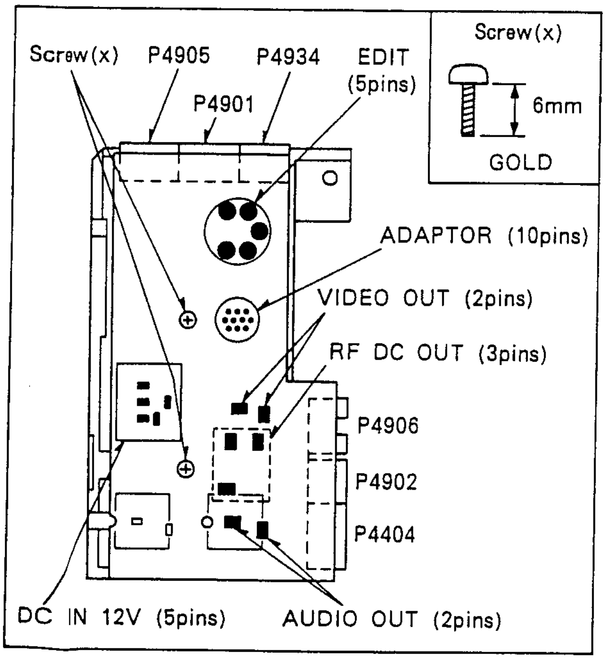

Screw(x)
6mm
GOLD
Screw(x)
P4905
P4934
EDIT (5pins)
P4901
ADAPTOR (10pins)
VIDEO OUT (2pins)
RF DC OUT (3pins)
P4906
P4902
P4404
DC IN 12V (5pins)
AUDIO OUT (2pins)

Fig. D26

2-2. REPLACEMENT PROCEDURES

2-2-1. REPLACEMENT OF CCD UNIT

(1) After removing of the CCD Unit install the new CCD Unit.
(2) Assemble the unit subject to the reverse steps of disassembly procedures.

NOTE :
(1) Do not touch the sureface of CCD Unit.
(2) Confirm the Whole adjustment procedures for Camera Section after replacing this CCD Unit.

2-2-2. REPLACEMENT OF ZOOM MOTOR UNIT

(1) Remove the Screw (A) and then remove the Zoom Motor Unit.
(2) Install the new Zoom Motor Unit.
Prior to this replacement, no dust around the Zoom Motor, especially around the gear unit should be confirmed.

2-2-3. REPLACEMENT OF FOCUS MOTOR UNIT

(1) Remove the Screw (B) and then remove the Focus Motor Unit.
(2) Install the new Focus Motor Unit.
Prior to this replacement, no dust around the Focus Motor Unit, especially around the gear should be confirmed.
(3) After this replacement, all the correct adjustments for all parts of auto-focus should be confirmed.

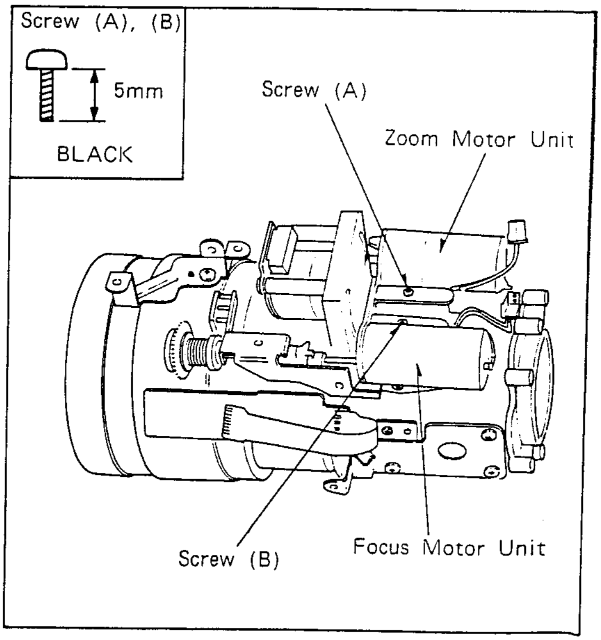

Screw (A), (B)
5mm
BLACK
Screw (A)
Zoom Motor Unit
Screw (B)
Focus Motor Unit

Fig. R1

2-2-4. REPLACEMENT OF CAPSTAN MOTOR UNIT

* Equipment required:
Reel Table Height Gauge 4822 395 90238
* Specification...0.5+–0.05mm

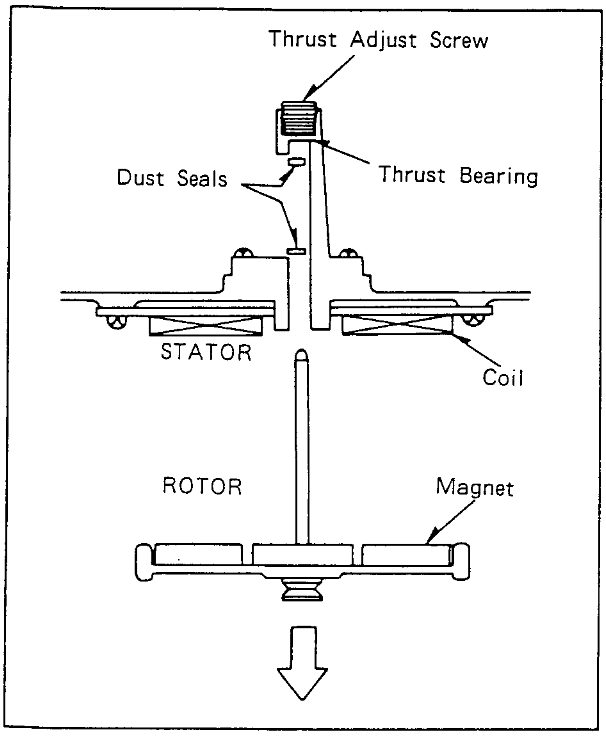

Thrust Adjust Screw
Dust Seals
Thrust Bearing
STATOR
Coil
ROTOR
Magnet

Fig. R2

(1) Remove the 2 screws and take belt cover off. After that remove the capstan belt.
(2) Tighten the Thrust Adjust Screw fully and pull the capstan rotor.

Note :

In this time pay attention not to lose two pieces of Dust Seal.

(3) Replace the new rotor with two pieces of Dust Seal.

Note :

(1) Pay attention to the replaced new rotor not to shock because of magnet absorbtion.
So hold the rotor firmly and replace it carefully.
(2) In this replacement, do not touch the Capstan shaft with any hard material like drivers or tweezers.

(4) After replacement, wipe off the Capstan shaft to remove oil, grease or dust.
(5) Unscrew Thrust Adjust Screw till the rotor is just touching to the stator.
(6) Turn this mechanism upside down and place the Reel Table Height Gauge so that the gauge fits to the chassis correctly, and read the height.
(7) Adjust the Thrust Adjust Screw so that the height difference just meets in the specification (0.5+–0.005mm) reading the height from the gauge.

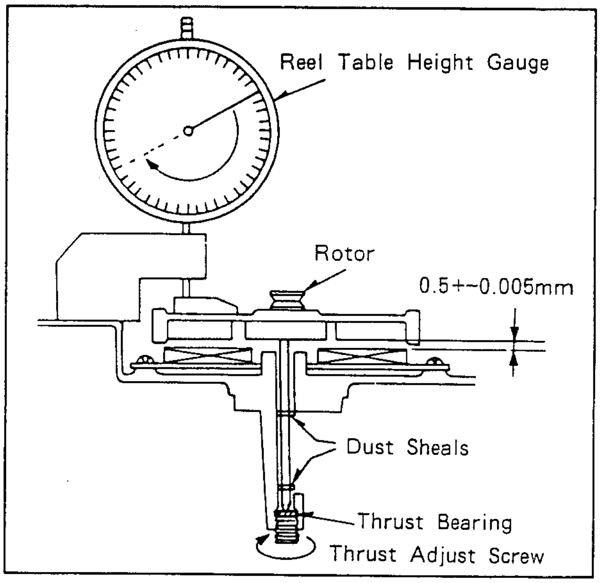

Reel Table Height Gauge
Rotor
0.5+–0.005mm
Dust Sheals
Thrust Bearing
Thrust Adjust Screw

Fig. R3

Note:

If the Thrust Adjust Screw is fully opened, you have to pay attention not to lose Thrust Bearing.
When it is fixed, confirm that the direction of Thrust Bearing is correct as shown below.

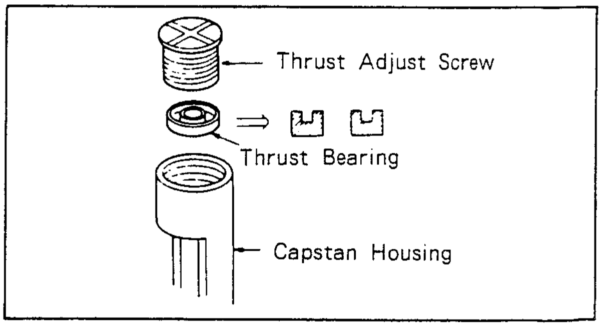
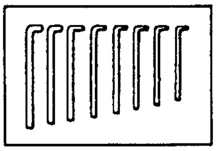
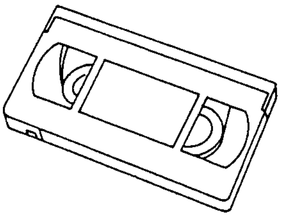
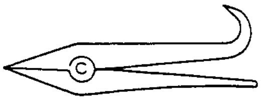
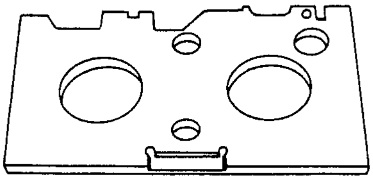
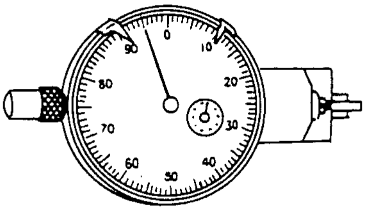
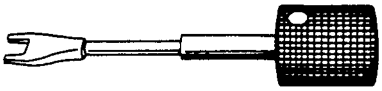
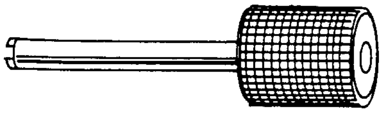
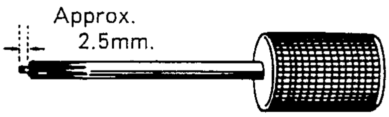
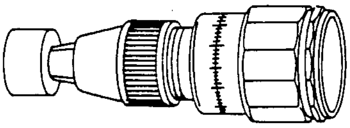
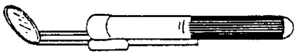
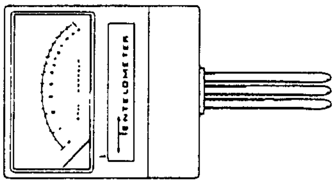
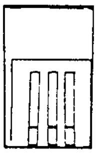
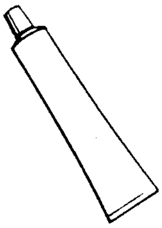

Thrust Adjust Screw
Thrust Bearing
Capstan Housing

Fig. R4

2-3. MECHANICAL ADJUSTMENT PROCEDURES

1. SERVICING FIXTURES & TOOLS

4822 395 50184 Hex Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2, 2.4, 3mm) 	4822 397 30103 VHS Alignment Tape 	395 40055 Retaining Ring Remover (3mm/4mm) 
395 80184 Post Adjustment Plate 	395 90238 Reel Table Height Gauge  	395 50274 H−Position Adj. Fixture 
4822 395 50275 Post Adjustment Screwdriver 	4822 395 50183 Fine Adjustment Screwdriver  Grind the top portion approximately 2.5mm	395 90232 Dial Torque Gauge 395 90233 Adaptor for 395 90232 395 90235 (Plastic Clamper Only)) 
4822 395 90585 Check Light 	4822 395 90584 Back Tension Meter (TZ−H7−UM) (Tentelometer, Made in U.S.A.)  	Head Cleaning Stick 
Morlytone Grease 	High Quality Machine Oil <Purchase Locally> (Reel Shaft, Capstan Shaft etc.)	
	Cleaning Liquid (Freon, TF, Alchol) <Purchase Locally> (Tape Transport Rubber Parts etc.)	

2-2-5. REPLACEMENT OF TENSION BAND

(1) Remove the cassette compartment.
(2) Remove a retaining ring and take out a Rew Arm (A) Unit.
(3) Remove a retaining ring and a snap washer and take out a tension Band Unit.

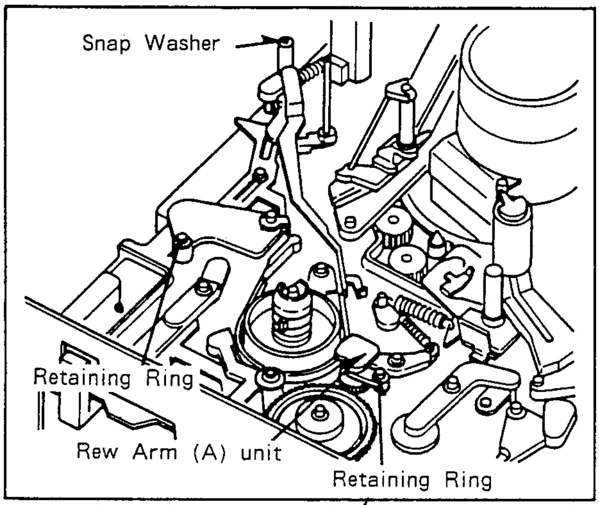

Snap Washer
Retaining Ring
Rew Arm (A) unit
Retaining Ring

Fig. R5

(4) Remove a Tension Band from Band Release Arm and Tension Arm Unit.

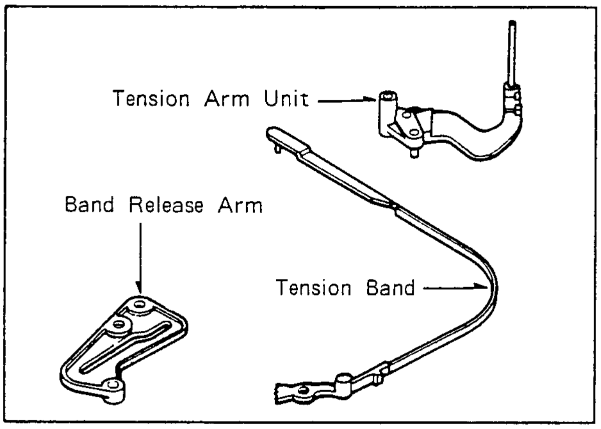

Tension Arm Unit
Band Release Arm
Tension Band

Fig.R6

(5) Replace a new Tension Band by Proceeding reverse steps shown above.

2. PROCEDURES FOR CLEANING OF UPPER CYLINDER UNIT

(1) Position the video head to clean and hold the upper cylinder to keep it from turning while cleaning.
(2) Gently rub the video head in direction of tape travel whith Head Cleaning Stick.
(3) Repeat for the other three video heads.

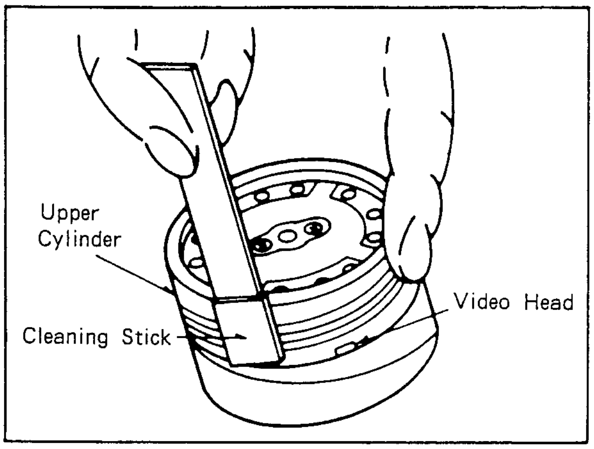


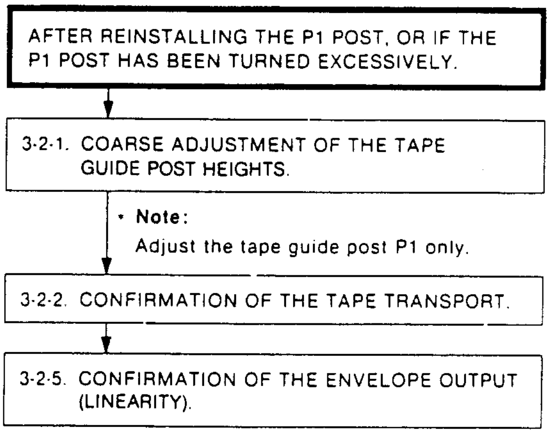
Fig. U1

Note:
(1) Do not rub vertically.
(2) Do not apply any pressure to heads.
If contamination is not easily removed,continued gentle wiping will usually remove the substance.

3. TAPE INTERCHANGEABILITY ADJUSTMENT PROCEDURES

3-1. ADJUSTMENT FLOW CHART

This flow chart describes the order of steps for adjusting the tape guide posts and A/C head in order to gain access to the items needing servicing.



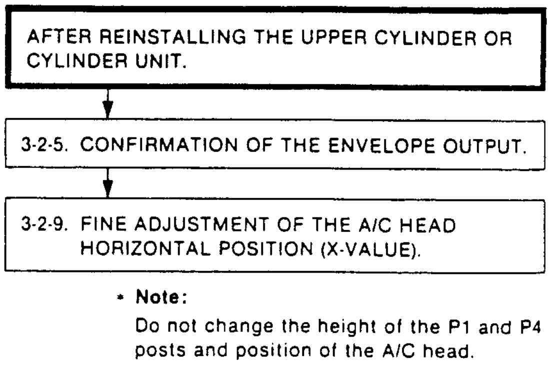
AFTER REINSTALLING THE P1 POST, OR IF THE P1 POST HAS BEEN TURNED EXCESSIVELY.

3-2-1. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS.

- **Note:** Adjust the tape guide post P1 only.

3-2-2. CONFIRMATION OF THE TAPE TRANSPORT.

3-2-5. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY).

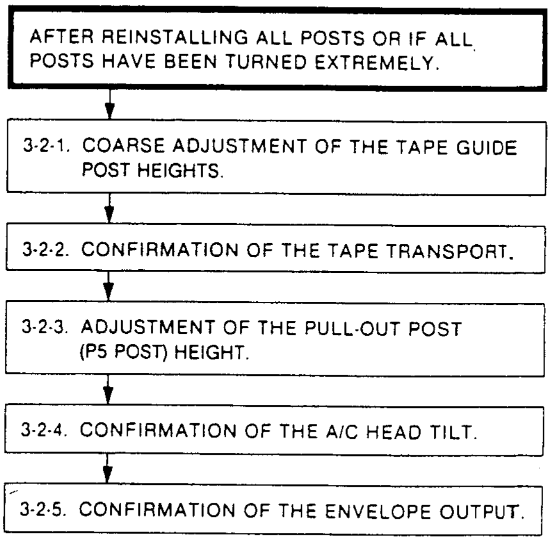


AFTER REINSTALLING THE UPPER CYLINDER OR CYLINDER UNIT.

3-2-5. CONFIRMATION OF THE ENVELOPE OUTPUT.

3-2-9. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE).

- **Note:** Do not change the height of the P1 and P4 posts and position of the A/C head.



AFTER REINSTALLING ALL POSTS OR IF ALL POSTS HAVE BEEN TURNED EXTREMELY.

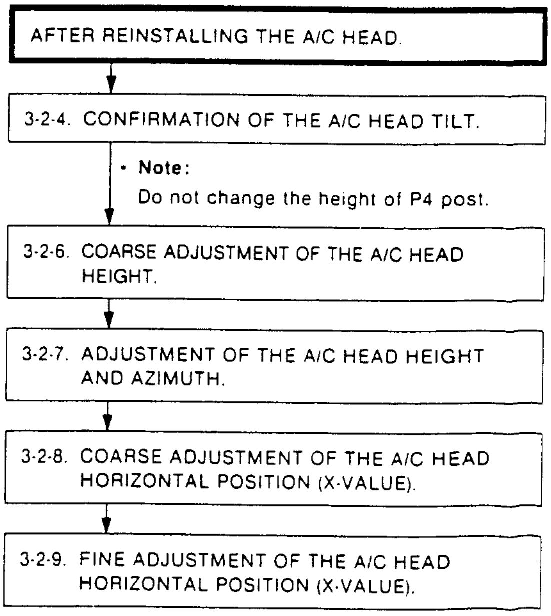
3-2-1. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS.

3-2-2. CONFIRMATION OF THE TAPE TRANSPORT.

3-2-3. ADJUSTMENT OF THE PULL-OUT POST (P5 POST) HEIGHT.

3-2-4. CONFIRMATION OF THE A/C HEAD TILT.

3-2-5. CONFIRMATION OF THE ENVELOPE OUTPUT.



AFTER REINSTALLING THE A/C HEAD.

3-2-4. CONFIRMATION OF THE A/C HEAD TILT.

- **Note:** Do not change the height of P4 post.

3-2-6. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT.

3-2-7. ADJUSTMENT OF THE A/C HEAD HEIGHT AND AZIMUTH.

3-2-8. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE).

3-2-9. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE).

AFTER REINSTALLING THE P4 POST, OR IF THE P4 POST HAS BEEN TURNED EXCESSIVELY.

3-2-1. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS.

- **Note:**
  Adjust the P4 post only.

3-2-2. CONFIRMATION OF THE TAPE TRANSPORT.

- **Note:**
  Adjust the P4 post only.

3-2-4. CONFIRMATION OF THE A/C HEAD TILT.

3-2-5. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY).

AFTER REINSTALLING THE PULL-OUT POST (P5 POST).

3-2-3. ADJUSTMENT OF THE PULL-OUT POST (P5 POST).

- **Note:**
  Do not readjust any other post.

3-2. ADJUSTMENT PROCEDURES

3-2-1. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT (P1, P2, P3 AND P4)

* Equipment Required:
Post Adjustment Plate.......... 4822 395 80184
Reel Table Height Gauge....... 4822 395 90238
Nut Driver (Purchase locally)
Post Adjustment Screwdriver. 4822 395 50275

1. Remove the cassette compartment from the mechanical chassis.
2. Place the Post Adjustment Plate over the reel tables.
   (Fig. M1)
   Confirm that the Post Adjustment Plate is firmly seated.

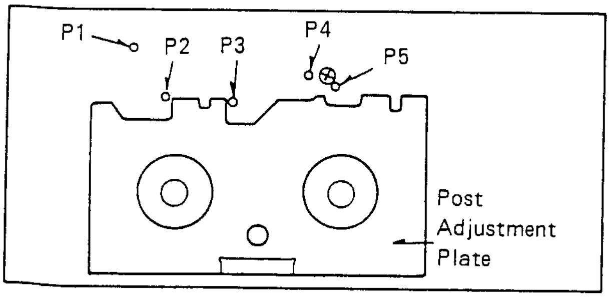


Fig. M1

3. Lower all 4 tape guide posts so that the lower tape guide on each post is below the top surface of the adjustment plate.
   Use the post Adjustment screwdriver to lower posts P2 and P3, and the Nut Driver to lower Posts P1, P4 and P5.
4. Place the Reel Table Height Gauge on the Post Adjustment Plate and lower the scraper so that it touches the plate (Fig. M2).

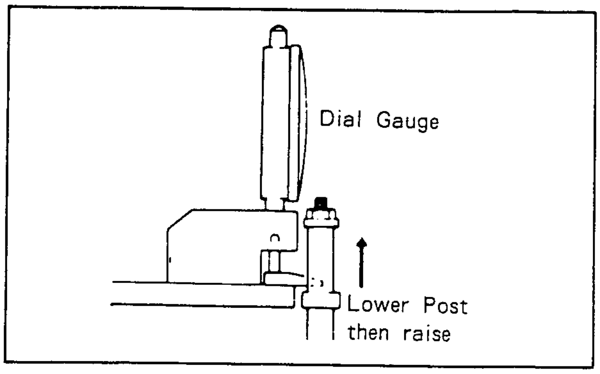


Fig. M2

5. Place the side of the scraper against the each post as shown in Figure M3, set the gauge to zero, then slowly raise the post until the lower tape guide just touches the bottom of the scraper. Use the gauge to determine the exact point at which the lower tape guide touches the scraper. (Fig. M3)

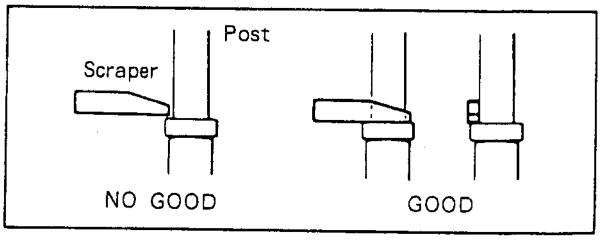


Fig. M3

3-2-2. CONFIRMATION OF THE TAPE TRANSPORT (TAPE GUIDE POSTS)

* Note:

1. The tape guide posts have been precisely adjusted at the factory. Therefore, normally do not change the height of P1, P4 and P5 posts. The following adjustment is required only when replacing the posts.
2. If curling is apparent proceed to the P4 post, wipe dirt from the pressure roller and capatan shaft using a soft cloth impregnated with Freon TF or cleaning liquid.
3. The adjustment of the post height is required only the one which has been replaced.

- Equipment Required
  Post Adjustment Screwdriver... 4822 395 50275
  Check Light.................... 4822 395 90585
  Nut Driver (Purchase locally)

1. To prevent the alignment tape from being damaged, use a normal cassette tape for this procedure.
   Playback the normal cassette tape and confirm that the tape travels without any curling at the edges of all the posts by using the check light. (Fig. M4 and Fig. M5)

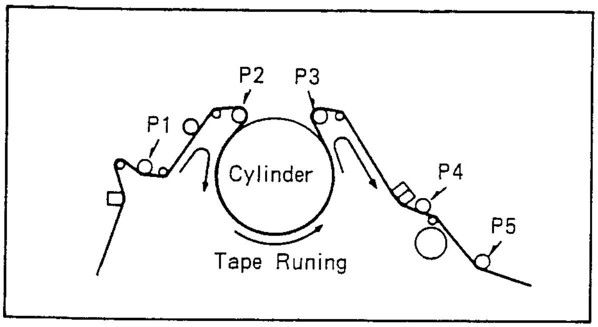


Fig. M4 Tape Transport Posts

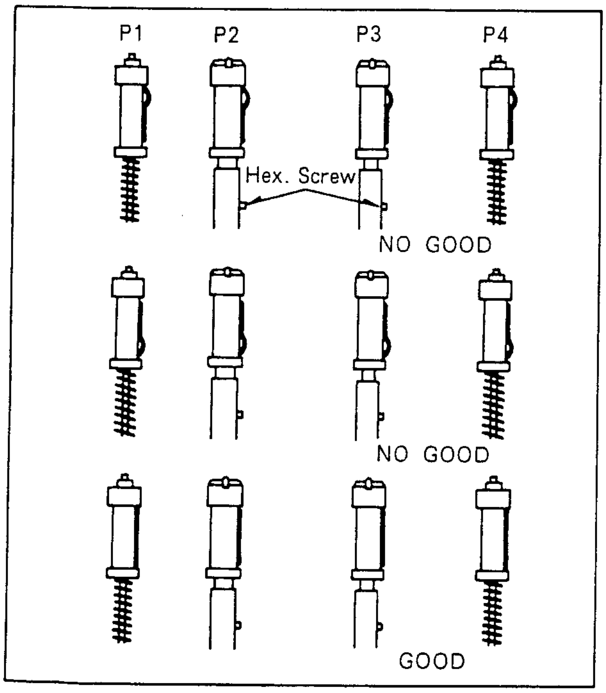


Fig. M5 Tape Guide Posts

2. If curling is apparent, adjust the height of posts by turning the top of post with the post adjustment screwdriver (posts P2 and P3) or the nut-driver (Posts P1 and P4). (Fig. M4 and M5)
3. After adjusting the P4 post, adjustment of the pull-out post (P5) is required.
   (Refer to "ADJUSTMENT OF THE PULL-OUT POST HEIGHT".)
4. If the tape curling cannot be corrected by adjusting the tape guide posts, then adjustment of the A/C head tilt may be needed.

3-2-3. ADJUSTMENT OF THE PULL-OUT POST (P5 POST) HEIGHT

- Notes:
  1. This adjustment should be performed only after adjusting tape guide post P4 as the height of the pull-out post is based on the height of post P4.
- Tools and Equipment Required:
  Post Adjustment Plate... 4822 395 80184
  Reel Table Height Gauge 4822 395 90238
  Check Light.................... 4822 395 90585
  Nut Driver (Purchase locally)

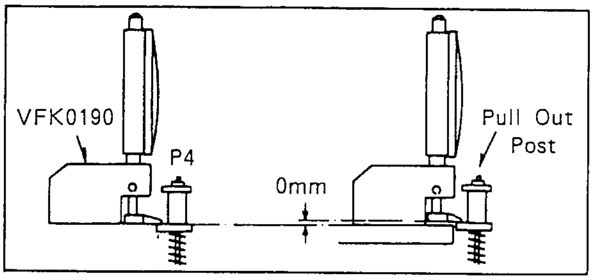


Fig. M6

1. Remove the cassette compartment by unscrewing 4 screws. Unit.
2. Place the Post Adjustment plate over the reel tables.
3. Place the Reel Table Height Gauge on the tape guide post P4, lower the scraper so that it touches the lower edges of P4, then set the gauge to zero ("0"). (Fig. M6)
4. Slightly lower the pull-out post by turning the nut on the post clockwise with the nut driver, and set the side of the scraper against the post as shown in Fig. M7.
5. Slowly turn the nut on the post counterclockwise until the gauge reads 0mm. (Fig. M6)
6. Confirm there is no tape curling at P4 post during reverse mode by using the check light.
   If tape curling occurs, back to step 3.

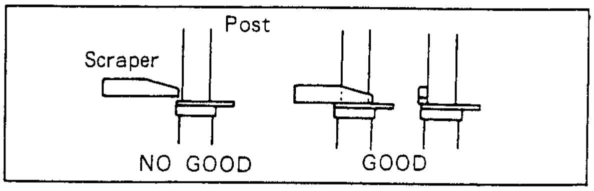


Fig. M7 Post Adjustment

3-2-4. CONFIRMATION OF THE A/C HEAD TILT

- Note:

This procedure should be performed after replacing the A/C head and pressure roller, and adjusting the height of the tape guide post (P4).
(Refer to "COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS".)

- Tools and Eqipment Required:
  Hex. Wrench Set......... 4822 395 50184
  Nut Driver (purchase locally)

1. Play back the begnning portion of NV E240 blank cassette tape and confirm that the tape runs between lower and upper limiters of the P4 post. If there is waving or frilling in the lower edge or top edge of the tape, correct the tilt of the A/C head by turning the screw located behind the A/C head. (Fig. M8)

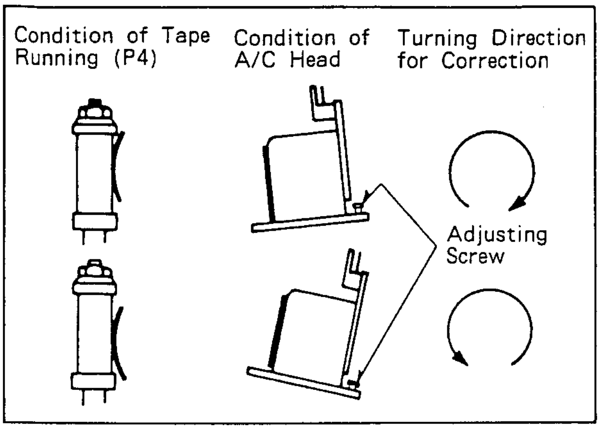

Condition of Tape Running (P4)
Condition of A/C Head
Turning Direction for Correction
Adjusting Screw

Fig. M8

2. If the tape curling cannot be acomplished by adjusting the A/C head tilt, then readjustment of the height of the tape guide post (P4) may be needed.

* Notes:

1. The tape guide post (P4) has been precisely adjusted at the factory. Therefore, normally the tape guide post (P4) readjustment is not required to eliminate the tape curling.
2. After adjusting the A/C head tilt, the A/C head height adjustment is required.

3-2-5. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY)

* Note:

Before playing back the alignment tape, play back a normal cassette tape and confirm correct transport.
(Refer to "CONFIRMATION OF THE TAPE TRANSPORT".)

* Tools and Equipment Required:

Post Adjustment Screwdriver	4822 395 50275
Alignment Tape.................	4822 397 30103

1. Connect the scope to the output of the Head Amp (TP3001) on the Main C.B.A. and TP2001 on the same C.B.A. to EX +− Trigger of the scope.
2. Play back the monoscope portion of the alignment tape 4822 397 30103
3. Turn the Tracking Control VR and adjust for maximum RF envelope.
4. If the RF envelope appears like example "A" or "B" in Fig. M9, then adjustment of tape gulde post (P2 : Entrance) is necessary.
5. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown "C" in Fig. M9. (See Fig. M12 also)

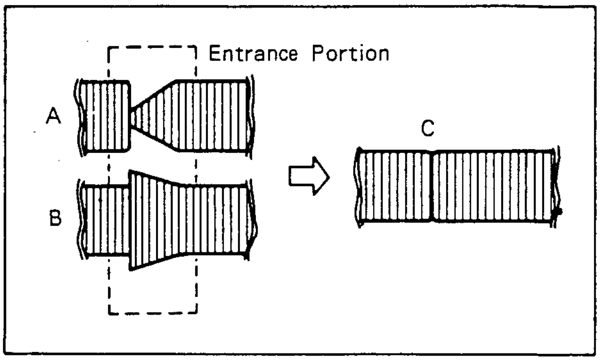


Fig. M9

6. If the RF envelope appears like example "D" or "E" in Fig. M10, then adjustment of the tape guide post (P3 : Exit) is necessary.
7. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in "F" in Fig. M10.

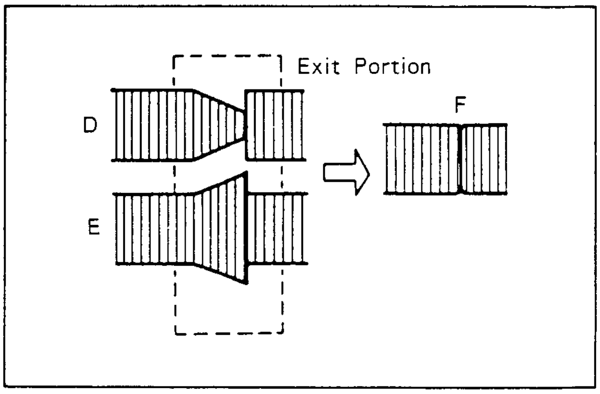


Fig. M10

8. Turn the Tracking VR from end to end. The variation of RF envelope should be nearly parallel as shown in Figure M11.
9. Turn the Tracking VR and adjust for maximum RF envelope. If the RF envelope does not meet these specs, V1/V 0.7, V2/V 0.8, then repeat steps 1~9 of item 3−2−5. again. (Fig. M13)

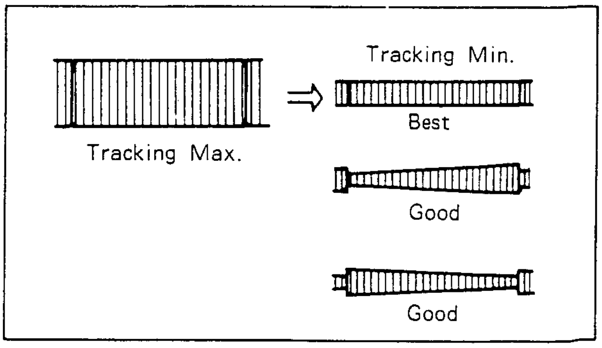


Fig. M11

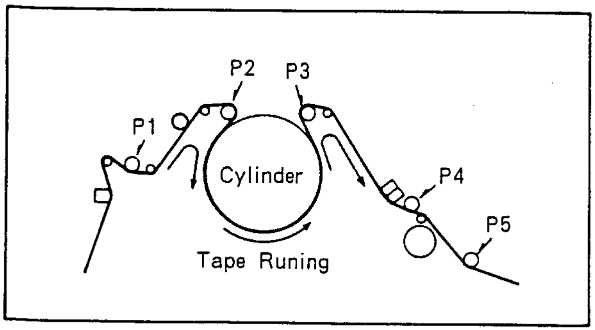


Fig. M12 Loading of post

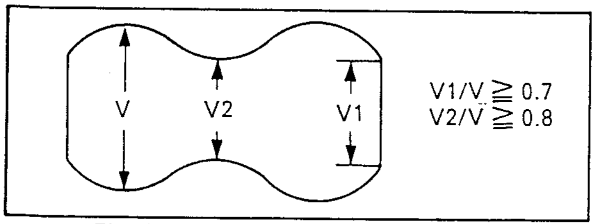


Fig. M13 Spec. of Envelope Figure

10. Turn the Tracking VR from end to end again and then back to the detent (Fix) position. At the detent position, the RF envelope waveform should be at maximum. If it is not at maximum then "ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION" is necessary. (Refer to "FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION".)

3-2-6. COARSE ADJUSTMENT OF THE A/C/ HEAD HEIGHT

* Note:

This procedure should be performed only when the A/C Head is replaced.

* Tools and Equipment Required:
Check Light........ 4822 395 90585
Nut Driver (Purchase locally)

(1) Looking at the lower edge of the control head within the tape running, ensure that lower edge of the tape runs along 0.25mm far from lower edge of the control head. (litte bit up position from lower edge of control head.) If it doesn't, slightly turn the nut (A) in either direction to correct clockwise to lower the head and counterclockwise to raise it.

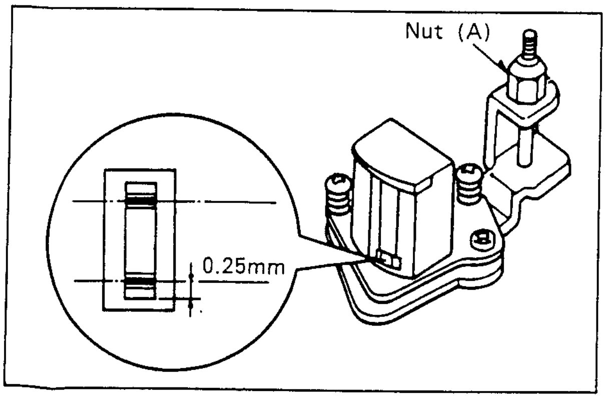


Fig. M14

3-2-7. ADJUSTMENT OF THE A/C HEAD AND AZIMUTH

* Note:

This procedure should be performed only when the A/C Head is replaced and posts hight are readjusted.

* Tools and Equipment Required:
Nut Driver (Purchase locally)
Alignment Tape........ 4822 397 30103

1. Connect the scope to the audio output. (TP4001)
2. Play back the 2nd portion (Normal Audio 6KHz) of the alignment tape, VFJ8125H3F.
3. Adjust the screw (B) so that the audio output level at TP4001 becomes maximum. (Fig. M15)

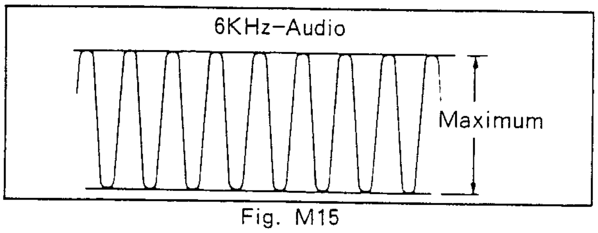


Fig. M15

4. Then adjust the nut (A) so that the audio output level (at TP4001) maximum.

3-2-8. ADJUSTMENT OF A/C HEAD HORIZONTAL POSITION

Note:

This procedure should be performed only when the A/C head is replaced and after performing the tape interchangeability adjustment.

* Tools and Equipment Required:
H. Position Adj. Fixture... 4822 395 50274
Alignment Tape................ 4822 397 30103

1. Set the Tracking Control VR to the center detent (fixed) position.
2. Connect the scope CH1 to TP3001 on the Main C.B.A., and TP4001 on the Audio C.B.A. to Ext-trigger the scope.
3. Play back the Monoscope patern of the alignment tape 4822 397 30103
4. Adjust the adjust screw so that the RF envelope output level becomes maximum at the detent position (Fig. M16, M17).
5. Turn the Tracking VR from end to end and then back to the detent position.
Confirm that the RF envelope output level is maximized at the detent position. (Fig. M11)

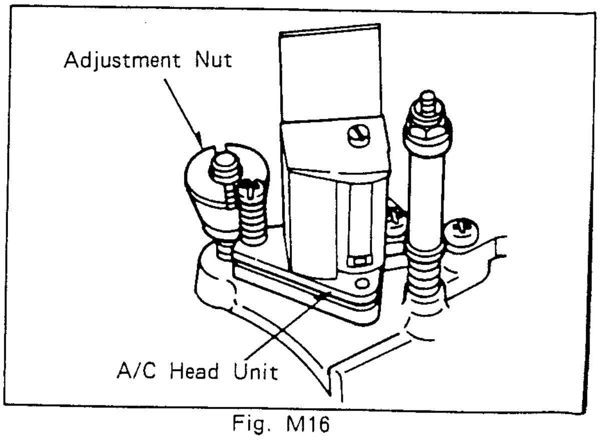


Fig. M16

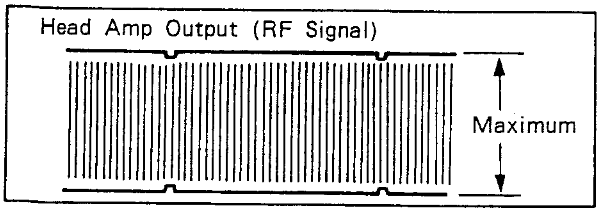

Head Amp Output (RF Signal)
Maximum

Fig. M17

4. OTHER ADJUSTMENT PROCEDURES

4-1. CONFIRMATION OF BRAKE TORQUE

* Equipment Required:
Dial Torque Gauge......... 4822 395 90232
Adaptor for Gauge......... 4822 395 90233
* Specification:------see spec table (Fig. M19).

(1) Remove the cassette compartment by unscrewing 4 screws.
(2) Attach the adaptor to the torque gauge and place the unit in STOP mode.
(3) Place the torque on the reel table. The weight of gauge should not rest on the reel table.

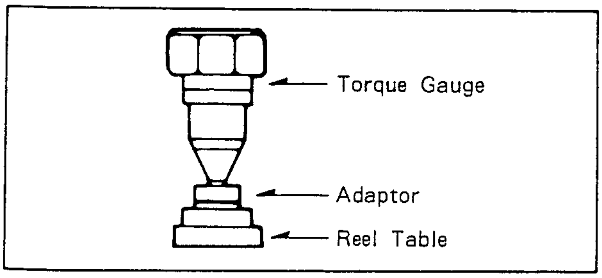
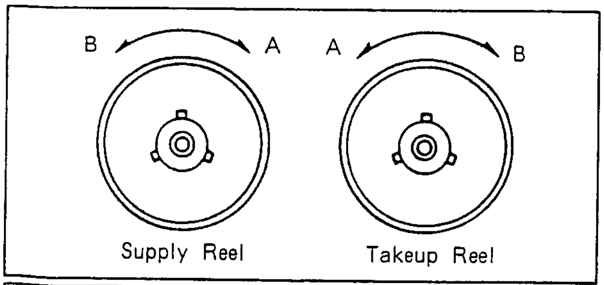

Torque Gauge
Adaptor
Reel Table

Fig. M18

(4) Turn torque gauge in either direction indicated in the Fig. M19, and read the gauge when the brake begins slipping.

Note:

If proper brake torque can not be optained, check the both take–up and supply clutch gear.


B
A
A
B
Supply Reel
Takeup Reel

	A	B
Takeup	28+–8g–cm	28+–8g–cm
Supply	28+–8g–cm	28+–8g–cm

Fig. M19

4-2. TENSION POST POSITION ADJUSTMENT

* Specification : ----------2.4mm~2.9mm

(1) Remove the Cassette Up unit by unscrewing 4 screws. (Refer to the disassembly procedures titled in Removal of the Cassette Up Unit).
Place the unit in Play mode by rotating Drive Gear (A) in clockwise shown below.

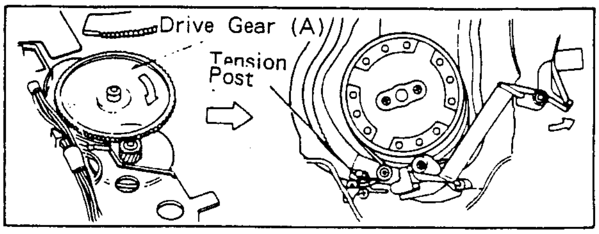

Drive Gear (A)
Tension Post

Fig. M20

Note:

In this case, make sure that the power is not applied.

(2) Loosen the screw (A) a little bit and adjust the Tension Post adjustment plate so that the "Distance (A)" shown below becomes just meet in the specification (2.4m~2.9mm).
(3) Tighten the screw (A) to fix it.

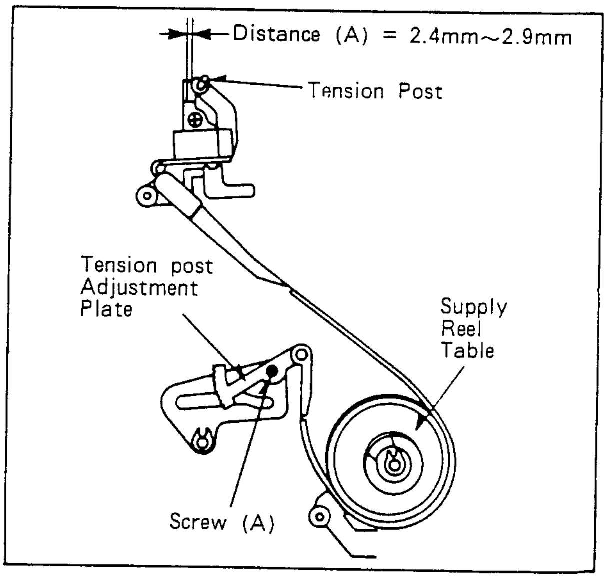

Distance (A) = 2.4mm~2.9mm
Tension Post
Tension post Adjustment Plate
Supply Reel Table
Screw (A)

Fig. M21

4-3. BACK TENSION ADJUSTMENT

* Equipment Required:
Back Tension Meter......... 4822 395 90584
VHS Cassette Tape (120min.)
* Specificcation:-----------19~23g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization. (for approx. 10~20 seconds)

2. Insert the Back Tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig. M22.

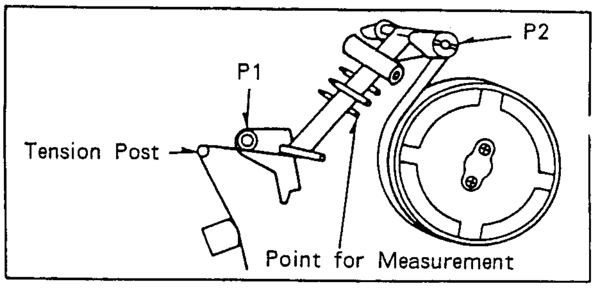


Fig. M22 Measurement of Back Tension

Note:

1. While measuring, make sure that the three probes of the meter are all in good contact with the tape.
2. As the tension meter is very sensitive, we recommend taking 3 separate readings.
3. If it is out of specification, change the spring notch as shown in Fig. M23.

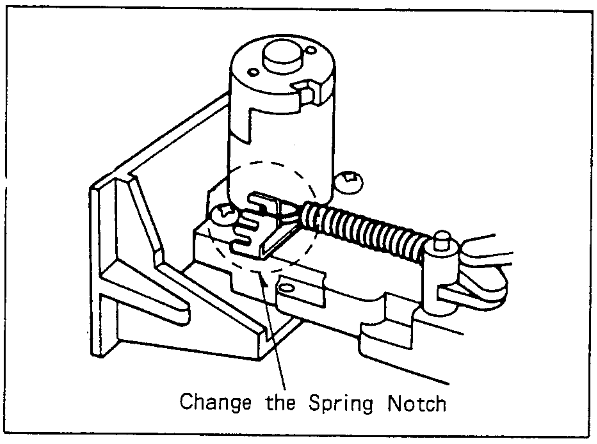


Fig. M23

4-4. REEL TABLES HEIGHT ADJUSTMENT

* Equipment Required:
Post Adjustment Plate........ 4822 395 80184
Reel Table Height Gauge..... 4822 395 90238
* Specification––––––––––0~–0.15mm

Note:

Cut–out on Post Adjustment Plate is reference of reel table height and their height is measured based on this refernce.

1. Place the post adjustment plate on the reels, and put the Gauge on the plate. Set the gauge to zero "0" with the foot scraper of the gauge touching the cut–out portion of the plate.

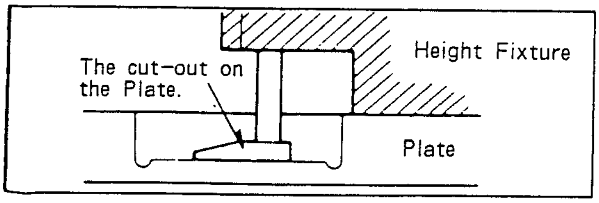


Fig. M24

2. Then measure the height of reel table and confirm the difference just performed in former step as shown below. Do the same way for the other reel table.

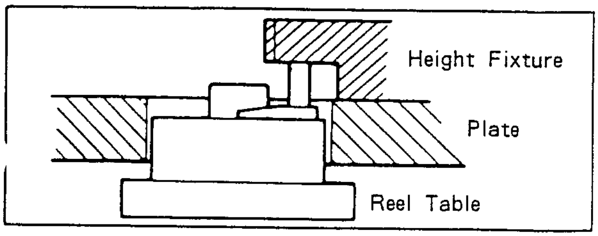


Fig. M25

3. If a height difference in readings between the cut–out portion of plate and reel tables is not 0~–0.15mm (higher or lower), adjust the height of the reel to obtain specified height.
4. For adjustment add or reduce a washer.

4-5. ADJUSTMENT OF FG HEAD GAP

* Specification:––––––––––0.17~0.18mm

(1). Slightly loosen the 2 screws.
(2). Put the paper which is used for cover page of this volume into the gap between F.G.Head and Capstan rotor. (The thickness of the cover page is approx 0.17mm)
(3). After adjustment, tighten 2 screws.

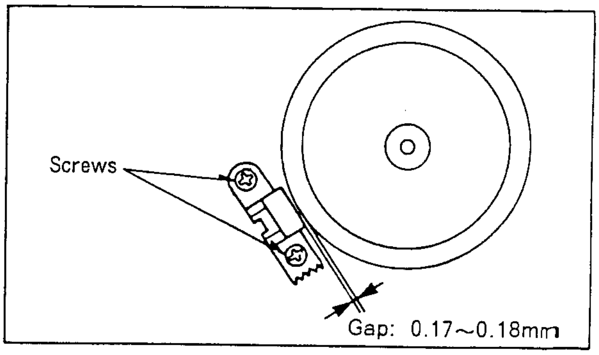


Fig. M26

Note:

Do not touch the surface of rotor and keep any magnetizable material away.

4-6. ASSEMBLY ADJUSTMENT PROCEDURES OF MECHANISM

The mechanism of this model is mostly engaged to the System Control Circuit, through the mode select switch.
Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.
If these parts are fixed in properly, the unit will be unloaded or compulsorily stopped.
And it will result being damaged at any mechanical or electrical parts.

4-6-1. ASSEMBLY PROCEDURES OF LOADING RINGS AND LOADING GEARS

(1). Install a Loading-Ring T (1) unit and a Loading Gear (B) so that both triangle marks meet each other as shown below.

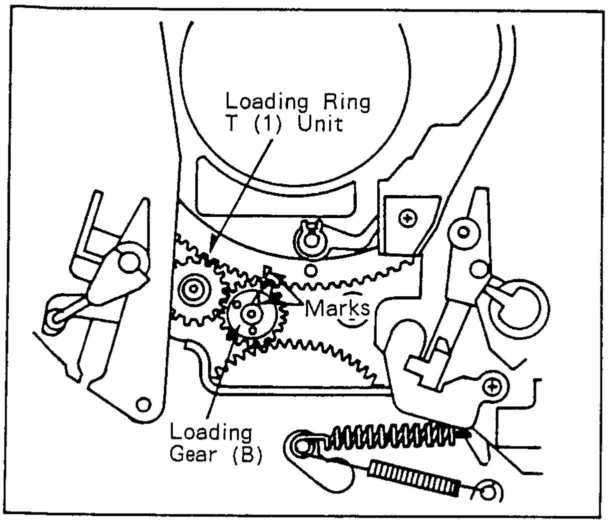

Loading Ring T (1) Unit
Marks
Loading Gear (B)

Fig. M27

(2). Install a Loading Gear (A) and next fix a Loading Ring S (1) Unit so that the holes of Loading-Ring S (1) Unit and T (1) Unit meet each other as shown below.

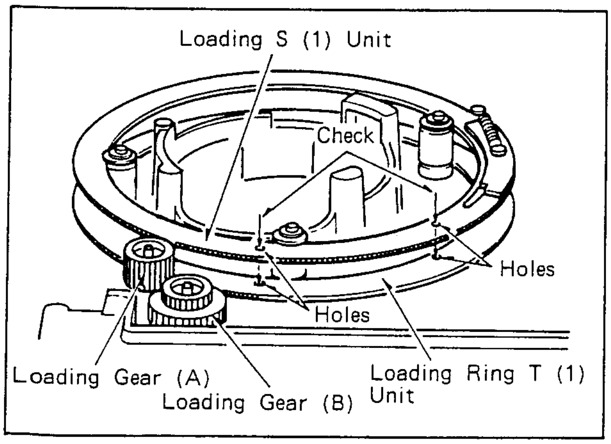

Loading S (1) Unit
Check
Holes
Holes
Loading Gear (A)
Loading Gear (B)
Loading Ring T (1) Unit

Fig. M28

Note:

Pay attention that the washers are remaining under the loading gears or any other parts.

4-6-2. ASSEMBLY PROCEDURES OF TAKE-UP LOADING GUIDE AND TAKE-UP LOADING POSTS UNIT

(1). Install Loading Guide T Unit and Take-up Post Stopper.
In that time, the small projection of a Loading Link T Unit must be inserted into a gap of Loading Guide T Unit.

(2). Fix a Take-up side Loading Post Unit holding the small projection of the Loading Link T Unit and install a T Shaft Holder Unit.

4-6-3. ASSEMBLY PROCEDURES OF SUPPLY LOADING GUIDES AND SUPPLY LOADING POST UNIT

(1). Install 2 Supply Loading Guides screwing 4 screws.

(2). Slide a Supply Loading Post Unit into a gap between the Loading Guide S1 and S2 hooking a Connection Rod to a Connection Tie Unit as shown below.

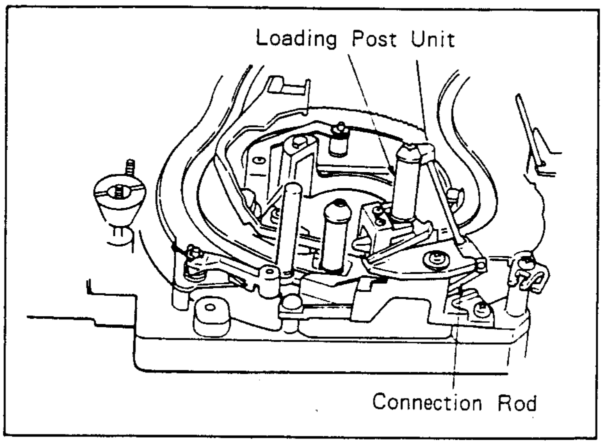

Loading Post Unit
Connection Rod

Fig. M29

(3). Set the Supply Loading Post Unit into unloading position by turning a intermediate pully gear as shown below.

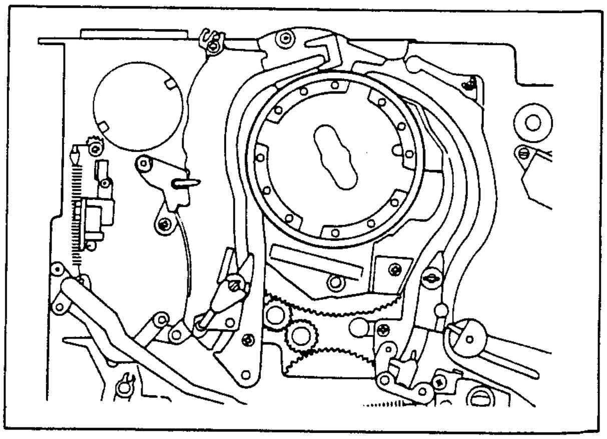


Fig. M30

(4). Install a V Stopper Base and Supply Post Stopper.

4-6-4. ASSEMBLY PROCEDURES OF MAIN ROD.

(1). Place a Main Rod inserting 3 Thrust Washers and then insert 3 washers.
After that, fix them using 2 retaining rings as shown below.

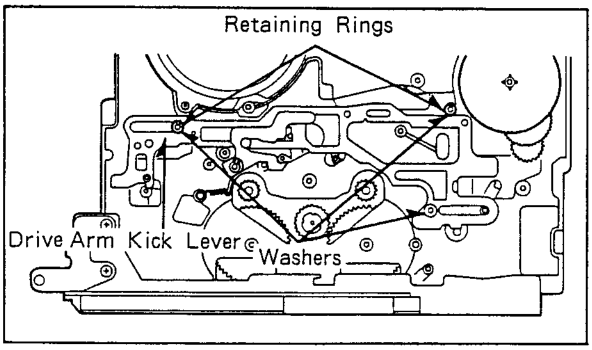


Fig. M31

(2). Install a Drive Arm Kick Lever hooking a Drive Arm Kick Lever Spring and fix it using ring.

4-6-5. ASSEMBLY PROCEDURES OF CAM GEAR AND SECTOR

(1). Make sure that the hole on a Main Rod just should coincide with the hole on chassis as shown below and install a Cam Gear should coincide with he hole between a Cam Gear and the chassis. Then install a retaining ring.

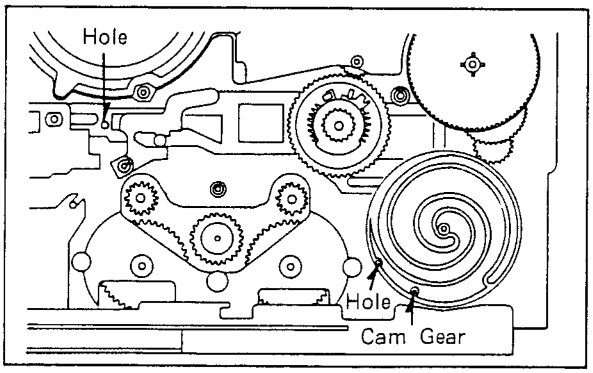


Fig. M32

(2). Install a Loading Gear (C) keeping the relation as shown below.

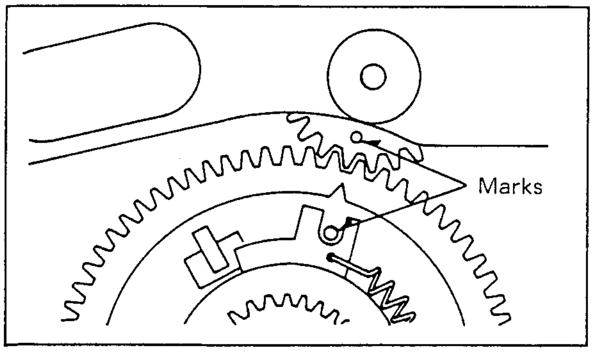


Fig. M33

(3). Install a Sector Gear as shown below.

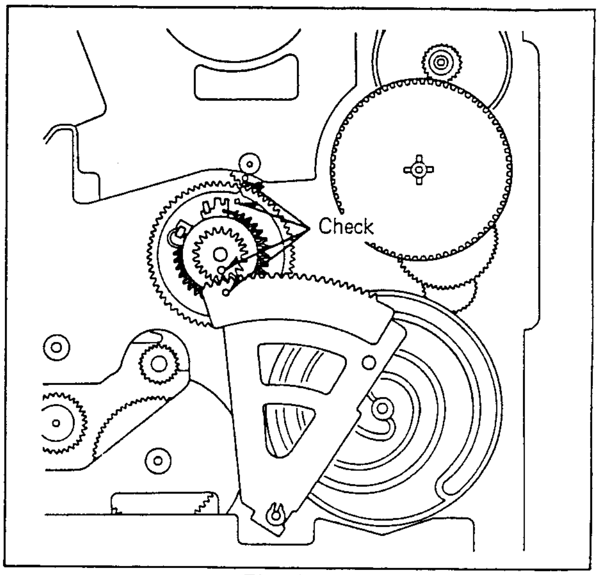


Fig. M34

(4). Fix a SG Limiter by 2 retaining rings.

4-6-6. ASSEMBLY PROCEDURES OF MODE SWITCH

(1). Perform this procedures after confirming the complete setting of mechanical parts.
First of all confirm that the hole on a Main Rod is meeting with a hole on a chassis.

(2). Move the moving contact of a Mode Select Switch into Stop position as shown below.

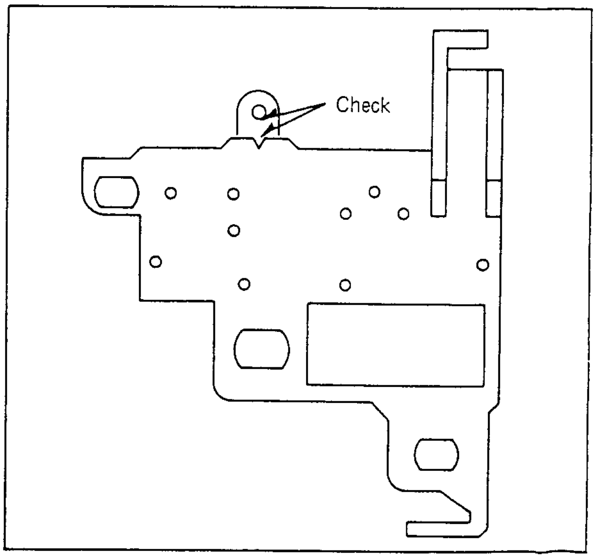


Fig. M35

(3). Install the Mode Select Switch keeping these relation written in item (1) and (2) by screwing 2 screw.

2-4. ELECTRICAL ADJUSTMENT PROCEDURES

2-4-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipments are required for adjustment of the VHS Movie VKR6855

(1) Dual trace Oscilloscope
 *Voltage range : 0.05 ~ 50V/div.
 *probe : 10:1 or 1:1
(2) V.T.V.M. (Vacuum Tube Volt Meter)
 D.V.M. (Digital Volt Meter)
 *Voltage range : 0.01 ~ 50V
(3) Frequency Counter
 *Frequency range : 0 ~ 10MHz
(4) Vectorscope
(5) Light Meter
(6) Tripod
(7) TV Monitor
(8) Lighting
 *3200 degrees kelvin / 1400lux on the chart surface.
(9) Reflection Charts
 *Logalithmic Gray Scale Chart 4822 397 30217
 *Colour Chip Chart 4822 397 30216
 *Ball Chart / J-Chart (VFK0580)
 *B/W / G/W / Hunting Chart 4822 397 30209
 *White Chart (White paper)
(10) Plastic tip driver
(11) Camera Unit Holder 4822 395 90566
(12) Camera Holder Arm 4822 432 60215
(13) Colour temperature conversion filters
 *C12 filter 4822 397 60152
 *C2 filter 4822 397 60153
 *C8 filter 4822 397 60154
(14) Camera Extension Cables
 *14Pin Cable 4822 321 22748
 *18Pin Cable 4822 395 30279

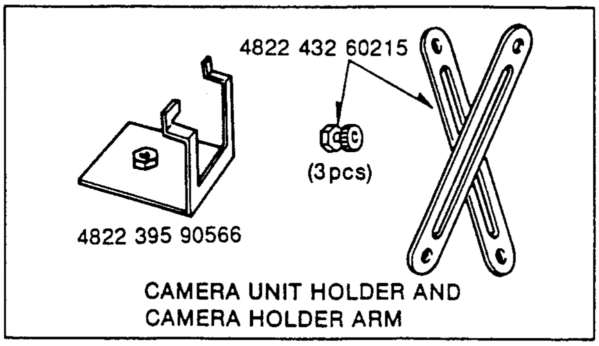

4822 432 60215
(3pcs)
4822 395 90566
CAMERA UNIT HOLDER AND
CAMERA HOLDER ARM

Fig. C1

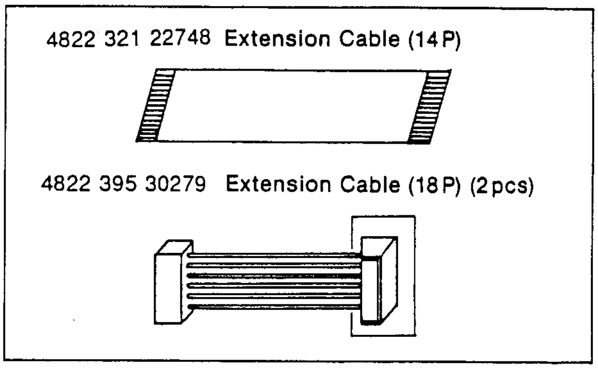

4822 321 22748 Extension Cable (14P)
4822 395 30279 Extension Cable (18P) (2pcs)

Fig. C2

PREPARATION
(1) Remove the casing panels.
(2) Mount the unit to tripod directly.
(3) White balance switch to "INDOOR"
(4) Auto focus selector to "OFF"
(5) High speed shutter to "OFF"
(6) Iris VR to centre click portion.

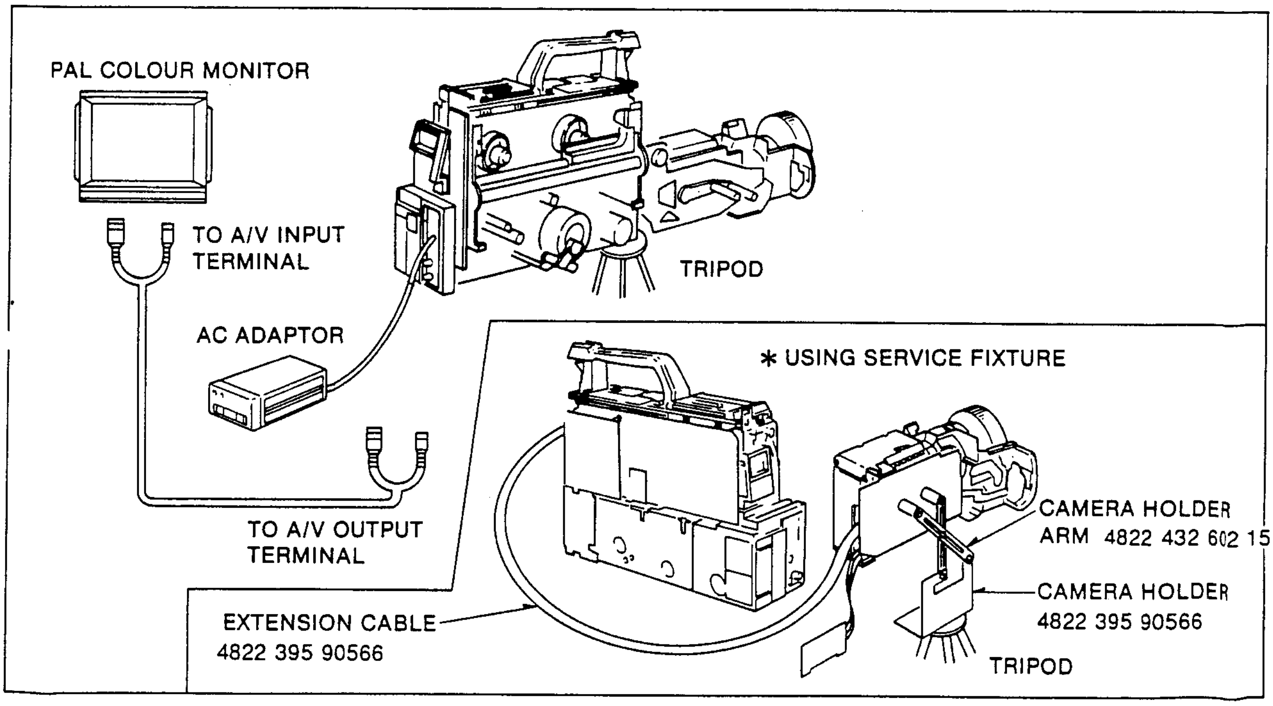

PAL COLOUR MONITOR
TO A/V INPUT TERMINAL
TRIPOD
AC ADAPTOR
* USING SERVICE FIXTURE
CAMERA HOLDER ARM 4822 432 602 15
TO A/V OUTPUT TERMINAL
CAMERA HOLDER 4822 395 90566
EXTENSION CABLE 4822 395 90566
TRIPOD

Fig. C3

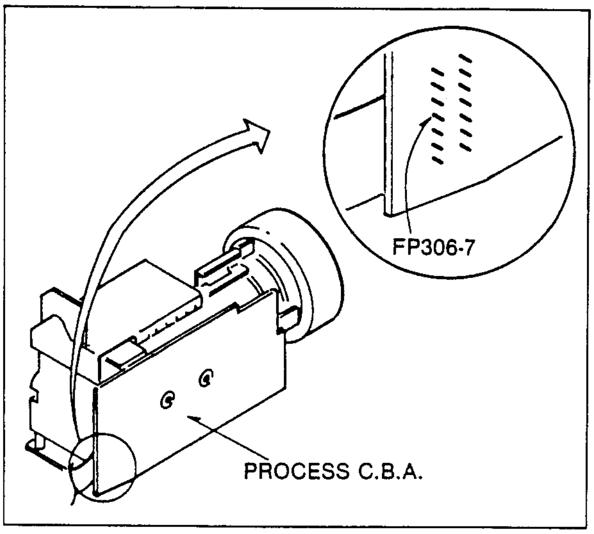
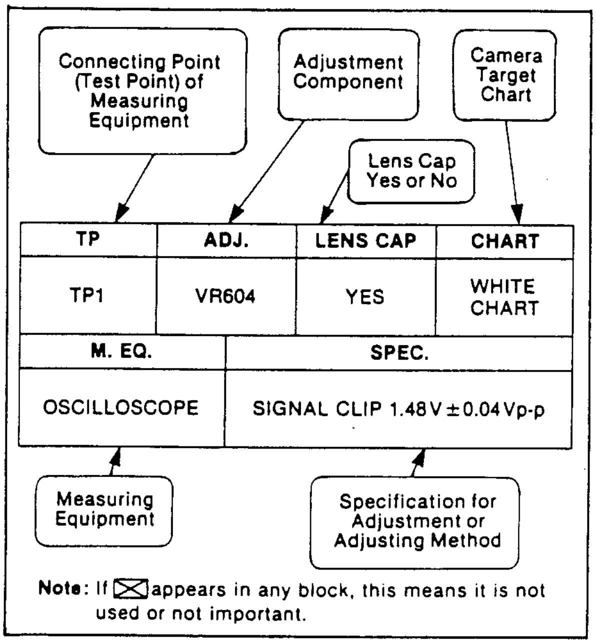

FP306-7
PROCESS C.B.A.

Fig. C4

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Adjustment Component
Camera Target Chart
Lens Cap Yes or No
Measuring Equipment
Specification for Adjustment or Adjusting Method

TP	ADJ.	LENS CAP	CHART
TP1	VR604	YES	WHITE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	SIGNAL CLIP 1.48V ± 0.04Vp-p

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. C5

CCD DRIVE SECTION

1. BACK FOCUS ADJUSTMENT
2. PLL FREQUENCY ADJUSTMENT
3. V-SUB ADJUSTMENT
4. CCD OUTPUT ADJUSTMENT

PROCESS SECTION

5. AGC ADJUSTMENT
6. Y 1H/2H DELAY LEVEL ADJUSTMENT
7. YH LEVEL ADJUSTMENT
8. CHROMA 1H/2H DELAY LEVEL ADJUSTMENT
9. BURST PHASE ADJUSTMENT
10. PEDESTAL LEVEL ADJUSTMENT
11. IRIS VR ADJUSTMENT
12. ALC ADJUSTMENT
13. CARRIER BALANCE AND BLACK LEVEL ADJUSTMENT
14. INDOOR WHITE BALANCE ADJUSTMENT
15. OUTDOOR WHITE BALANCE ADJUSTMENT
16. AWB OFFSET ADJUSTMENT
17. COLOUR PHASE AND R-Y/B-Y GAIN ADJUSTMENT
18. HIGH INTENSITY SUPPRESS (HIGH CUT) ADJUSTMENT
19. AWT MODE (OFFSET) ADJUSTMENT
20. AWT MODE (GAIN) ADJUSTMENT
21. HALL AMP ADJUSTMENT

AUTO FOCUS SECTION

22. AF GATE ADJUSTMENT
23. BIMOLF GAIN CONTROL ADJUSTMENT
24. AF VH FREQUENCY ADJUSTMENT

TABLE 1

CCD DRIVE SECTION

1.BACK FOCUS ADJUSTMENT

(1) Aim the camera at the Hunting Chart 3m distance and zoom all the way in fully tele position.
(2) Focus the lens on the object.
(3) Confirm that Focus ring indicates 3m.
(4) Adjust the relay lens adjustment point as shown in Fig. C6.

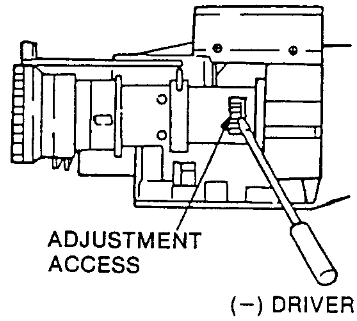


Fig. C6

2. PLL FREQUENCY ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
PIN 7 OF B201	C206		

M. EQ.	SPEC.
FREQUENCY COUNTER	9.656250MHz±10Hz

B201,C206 : Sensor C.B.A.

(1) Connect the frequency counter to Pin 7 of B201
(2) Adjust the C206 (PLL frequency control) so that the frequency becomes 9.656250MHz +− 10Hz

3. V-SUB ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR201	NO	REFER TO Fig. C7

M. EQ.	SPEC.
MONITOR TV	NO BLOOMING

(1) Zoom all the way in fully tele position and aim the camera at the Halogen lamp as shown in in Fig. C7.
(2) Set the High Speed Shutter SW to OFF position.

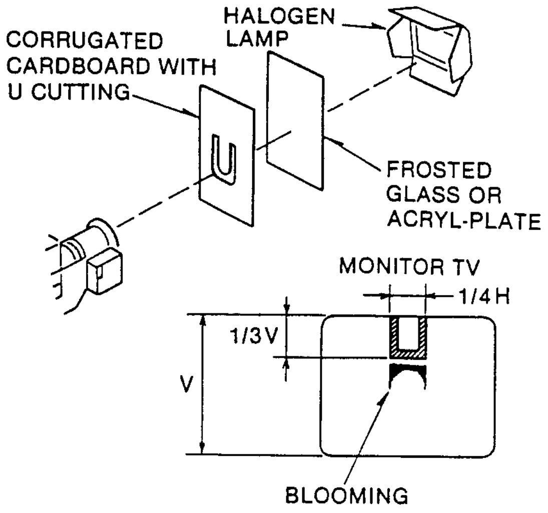

HALOGEN LAMP
CORRUGATED CARDBOARD WITH U CUTTING
FROSTED GLASS OR ACRYL-PLATE
MONITOR TV
1/4H
1/3V
V
BLOOMING

Fig. C7

(3) Blind the lighting using frosted glass or acryl plate to diffuse incoming light, and also put a corrugated cardboard which inside is cut to "U" shape as shown in Fig. C8.
(4) Connect the jumper wire between TP516 and TP520 to open the iris.
(5) Adjust VR201 (Blooming control) so that blooming is just disappeared.
If blooming is not disappeared completely, adjust VR201 until minimum blooming.
(6) High Speed Shutter "ON" and "OFF" both mode, confirm that the monitored picture does not contain the blooming even the corrugated cardboard moves as shown in Fig. C8.

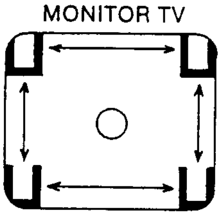


Fig. C8

Note :
J−Chart is also available for rough

(1) Aim the camera at J−Chart.
(2) Set the lens to fully tele position. And set the distance so that lower 1/3 of J−Chart comes to full picture frame on TV screen.
(3) Connect the jumper wire between TP516 and TP520 to open the the iris.
(4) Adjust the VR201 so that the blooming is just disappeared.

4. CCD OUTPUT ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP201	VR202	NO	J CHART

M. EQ.	SPEC.
OSCILLOSCOPE	180mV±10mV

Note :
TP201,VR202 : Sensor C.B.A.
TP515,VR327 : Process C.B.A.

(1) Aim the camera at J-Chart.
(2) Adjust the VR327 (ALC control) so that the voltage at TP515 becomes 280mV +- 10mV.
(3) Adjust the VR202 (CCD output control) so that the level "A" of TP201 becomes 180mV +- 10mV as shown in Fig. C9.

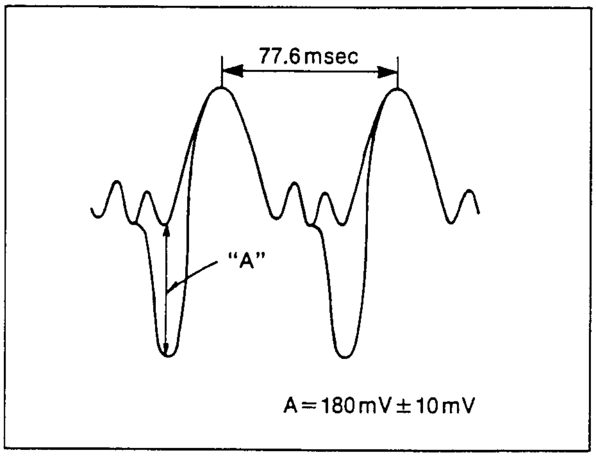


Fig. C9

PROCESS SECTION

5. AGC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP514	VR324	NO	GRAY SCALE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	300mV±20mVp-p

Note :
TP514,VR324 : Process C.B.A.

(1) Aim the camera at the Gray Scale Chart.
(2) Connect the oscilloscope to TP514 and trigger with pin 7 of FP306 (H-rate).
(3) Adjust the zoom to obtain 40usec picture frame as shown in Fig. C10.
(4) Adjust the VR324 (AGC control) so that the signal level becomes 300mV +- 20mVp-p.

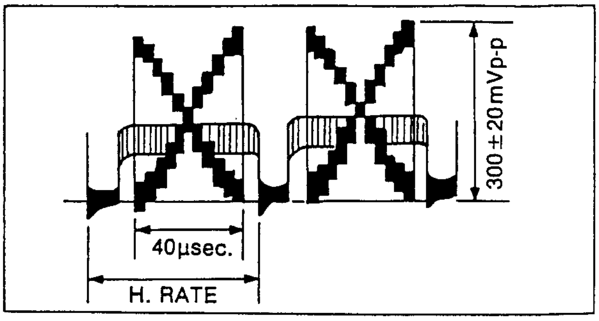


Fig. C10

6. Y 1H/2H DELAY LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TS5, TS2, TS8 (TEST ROUND)	VR320 VR318	NO	GRAY SCALE

M. EQ.	SPEC.
OSCILLOSCOPE	0±4.5mVp-p

Note :
TS2,TS5,TS8,VR318,VR320 : Process C.B.A.

(1) Aim the camera at the Gray Scale Chart.
(2) Connect the oscilloscope to TS5 (CH-A) and TS2 (CH-B). (The gain for CH-A and CH-B should be same.)
(3) Set the CH-B for "INVERT" mode.
(4) Set the oscilloscope for "ADD" mode.
(5) Adjust the VR320 (1H delay level control) so that the waveform level becomes 0 +- 4.5mVp-p
(6) Reconnect the CH-B probe to TS8 and continue the "INVERT" mode for CH-B. (CH-A still connecting to TS5.)
(7) Adjust the VR318 (2H delay level control) so that waveform level becomes 0 +- 4.5mVp-p.

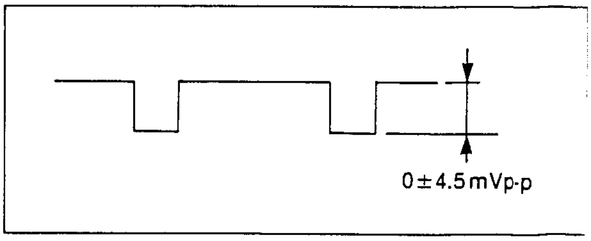


Fig. C11

7. YH LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
PIN 7 OF FP 306	VR315	NO	GRAY SCALE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	B/A=2.33±0.15

Note :
FP306,VR315 : Process C.B.A.

(1) Aim the camera at the Gray Scale Chart.
(2) Connect the oscilloscope to pin7 of FP306.
(3) Adjust the VR315 (YH level control) so that the signal ratio "B/A" becomes 2.33 +- 0.15 as shown in Fig. C12.

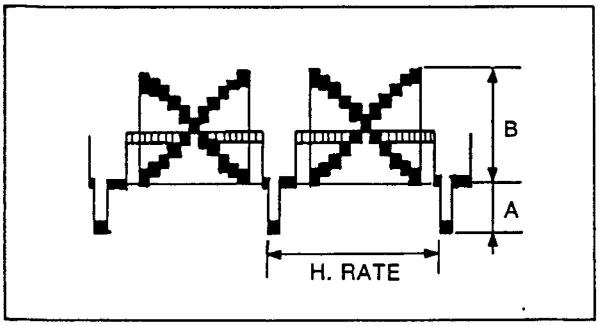


Fig. C12

8. CHROMA 1H/2H DELAY LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TS7, TS10, TS11 (TEST ROUND)	VR319 VR317	YES	

M. EQ.	SPEC.
OSCILLOSCOPE	0±4.5mV

Note :
TS7,TS10,TS11,VR317,VR319 : Process C.B.A.

(1) Cover the camera lens with lens cap.
(2) Supply the "WHD" signal from Pin2 of B305 to TS7 through the buffer circuit and adjust VR1 on the buffer circuit so that the level of TS7 becomes 300mV +- 5mVp-p as shown in Fig. C13.

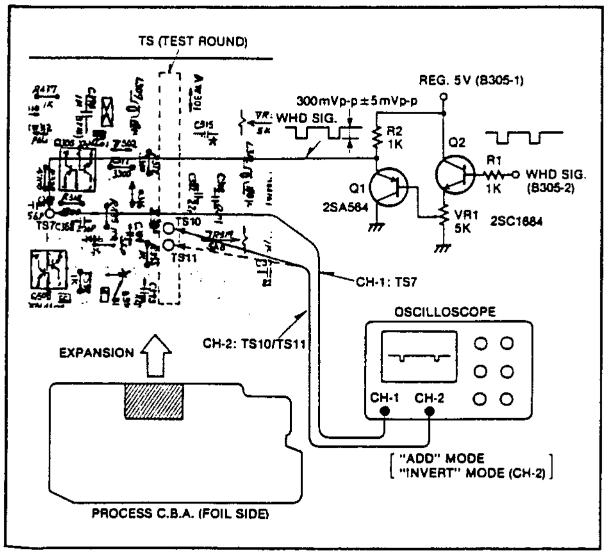

TS (TEST ROUND)
REG. 5V (B305-1)
300mVp-p±5mVp-p
WHD SIG.
R2
1K
Q2
R1
WHD SIG.
1K
(B305-2)
Q1
2SA584
VR1
5K
2SC1684
TS7
TS10
TS11
CH-1: TS7
CH-2: TS10/TS11
EXPANSION
OSCILLOSCOPE
CH-1
CH-2
"ADD" MODE
"INVERT" MODE (CH-2)
PROCESS C.B.A. (FOIL SIDE)

Fig. C13

(3) Set the oscilloscope to "ADD" mode and "INVERT" mode for CH-B.
(4) Connect the oscilloscope CH-A to TS7 and CH-B to TS10.
(5) Adjust the VR319 (Chroma 1H delay level control) so that the level of waveform becomes 0 +- 4.5mV.
(6) Exchange the connecting point of CH-B from TS10 to TS11.
(7) Adjust the VR317 (Chroma 2H delay level control) so that the level of waveform becomes 0 +- 4.5mV.

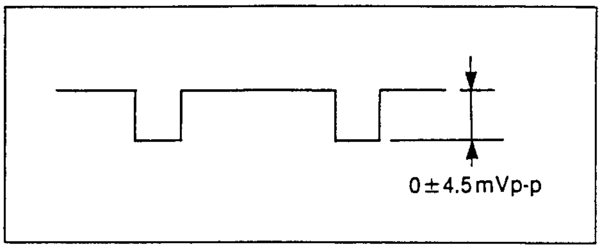


Fig. C14

9. BURST PHASE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUT	VR329	YES	

M. EQ.	SPEC.
VECTOR SCOPE	135 degree±2 degree

Note :
VR329 : Process C.B.A.

(1) Cover the lens with lens cap.
(2) Supply the video output to vectorscope.
(3) Set the vectorscope for NTSC mode.
(4) Adjust the VR329 (Burst phase control) so that burst phase becomes 135 +- 2degrees.

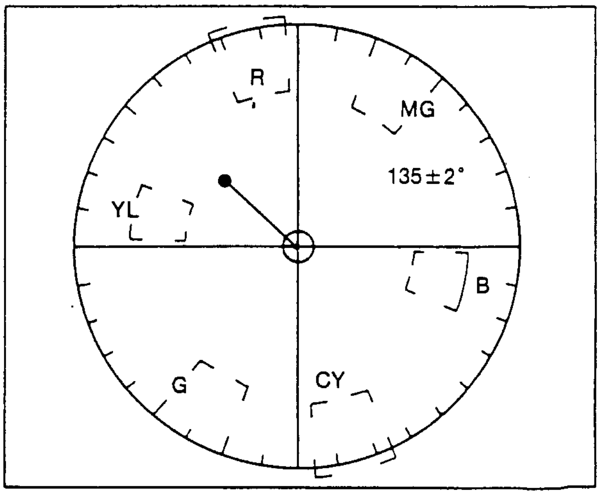

R
MG
135±2°
YL
B
G
CY

Fig. C15

10. PEDESTAL LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP514	VR301	YES	

M. EQ.	SPEC.
OSCILLOSCOPE	SIGNAL LEVEL EQUALS THE BLANKING (BLANK) LEVEL.

Note :
TP514,VR301 : Process C.B.A.

(1) Cover the camera lens with lens cap.
(2) Connect the oscilloscope to TP514 and trigger with Pin7 of FP306 (H−rate).
(3) Adjust the VR301 (Pedestal level control) so that the signal level equals the BLK (Blanking) level as shown in Fig. C16.

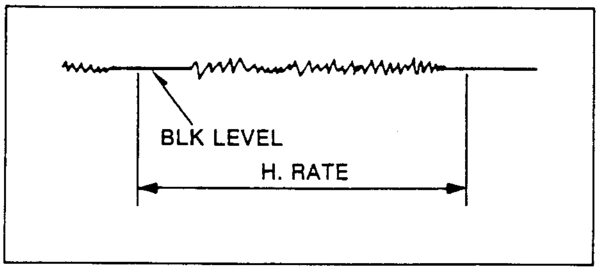


Fig. C16

11. IRIS VR ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP523	VR322	YES	

M. EQ.	SPEC.
D.V.M. V.T.V.M.	2.1V±0.1V

Note :
TP523,VR322 : Process C.B.A.
AGC adjustment should be completed.

(1) Set the iris VR to centre click position and cover the camera lens with the lens cap.
(2) Connect the volt meter to TP523.
(3) Adjust VR322 (Iris control) so that the DC voltage of TP523 becomes 2.1V +− 0.1V

12. ALC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP515	VR327	NO	GRAY SCALE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	280mV±20mVp-p

Note :
TP515,VR327 : Process C.B.A.

(1) Set the iris VR to centre click position.
(2) Aim the camera at the Gray Scale Chart.
(3) Connect the oscilloscope to TP515 and trigge with Pin7 of FP306 (H−rate).
(4) Adjust the zoom to obtain 40usec picture fram as shown in Fig. C17.
(5) Adjust the VR327 (Auto iris control) so tha the signal level becomes 280mV +− 20mVp−p.

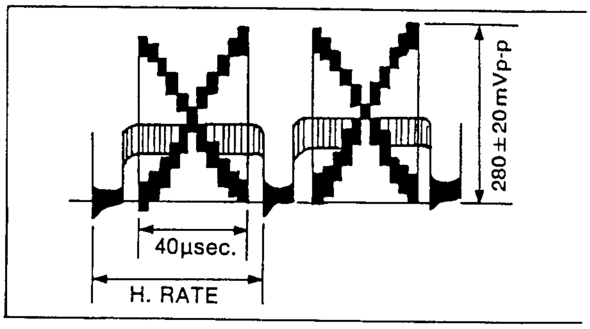


Fig. C17

13. CARRIER BALANCE AND BLACK LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR305 VR306 VR303 VR304	YES	

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note :
TP511,TP512,TP513,VR303,VR304,VR305,VR306
Process C.B.A.

WITH VECTORSCOPE

(1) Cover the lens with lens cap.
(2) Connect the jumper wire between centre o VR324 and TP511.
(3) Connect the jumper wire among TP511,TP512 an TP513 to cut the R−Y, B−Y feed back loop.

(4) Adjust the VR305 and VR306 (Black pedestal controls) so that the colour vector at the centre of screen on vectorscope.
(5) Disconnect the jumper wire between VR324 and TP511.
(6) Adjust the VR303 and VR304 (Carrier balance controls) so that the colour vector at the centre of screen on vectorscope.

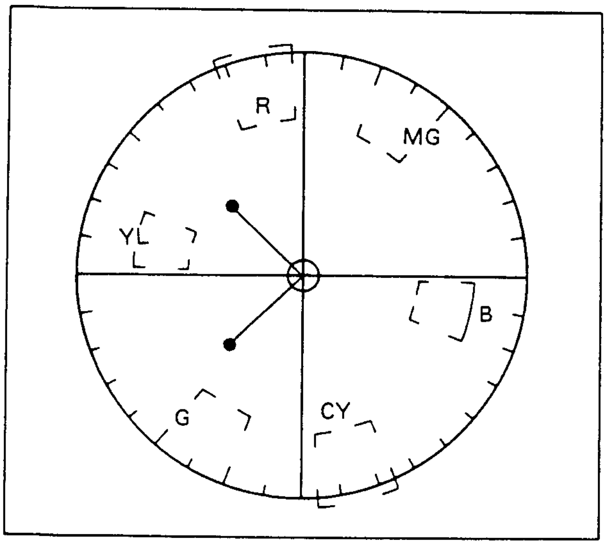


Fig. C18

WITH OSCILLOSCOPE

(1) Adjustment condition and procedures are the same as using vectorscope.
(2) Adjust the VR305 and VR306 first so that the waveform becomes minimized as shown in Fig. C19.
(3) Adjust the VR303 and VR304 so that the waveform becomes minimized as shown in Fig. C19.

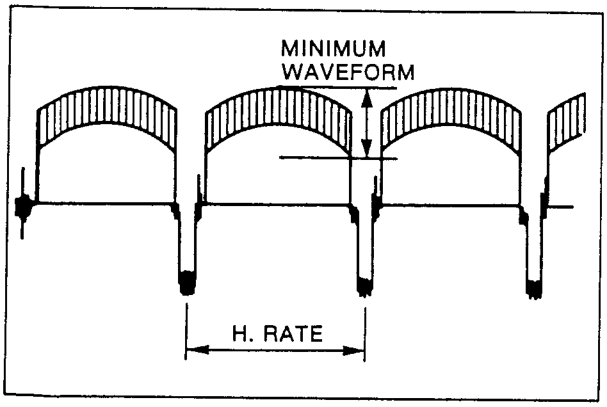


Fig. C19

14. INDOOR WHITE BALANCE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR311 VR312	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note :
TP511,TP512,TP513,VR311,VR312 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance switch to "INDOOR" mode.
(2) Connect the jumper wire among TP511,TP512 and TP513 to cut the R-Y, B-Y feed back loop.
(3) Aim the camera at the White Chart.
(4) Supply the video output to vectorscope.
(5) Adjust the VR311 and VR312 (White balance controls) so that the colour vector at the centre of screen on vectorscope.

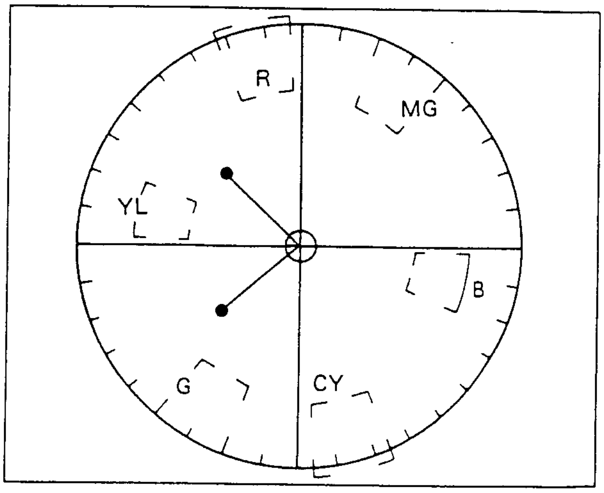


Fig. C20

WITH OSCILLOSCOPE

(1) Adjustment condition and procedures are the same as using vectorscope.
(2) Adjust the VR311 and VR312 so that the waveform becomes minimized.

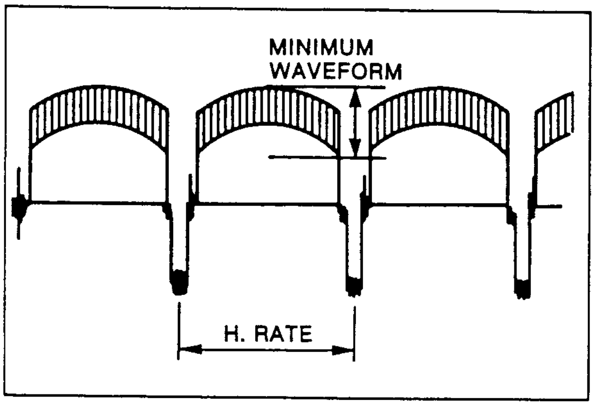

MINIMUM
WAVEFORM
H. RATE

Fig. C21

15. OUTDOOR WHITE BALANCE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR528 VR529	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note :
TP511,TP512,TP513,VR528,VR529 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance switch to "OUTDOOR".
(2) Connect the jumper wire among TP511,TP512 and TP513 to cut the R−Y, B−Y feed back loop.
(3) Aim the camera at the White Chart.
(4) Supply the video output to vectorscope.

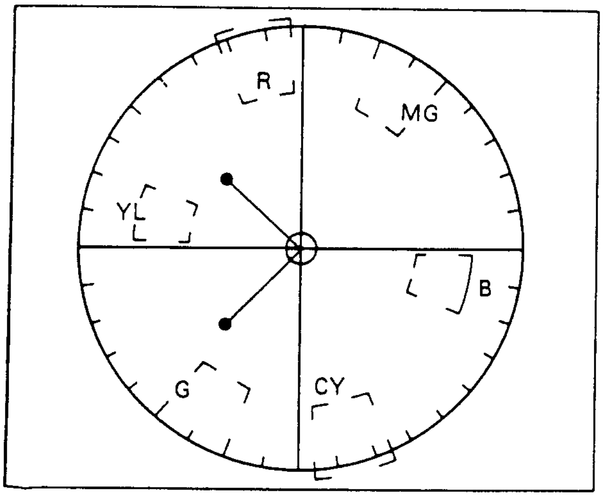


Fig. C22

(5) Attach the colour temperature conversion filter **Kodak 80A (C12)** and **Kodak 82A (C2)** which convert 3200 degrees Kelvin to 5600 degrees Kelvin in front of the lens and AWT sensor.
(If the colour temperature conversion filters are not available, use a day light source.)
(6) Adjust the VR528 and VR529 (Outdoor gain controls) so that the colour vector at the centre of screen on vectorscope.

WITH OSCILLOSCOPE

(1) Adjustment condition and procedures are the same as using vectorscope.
(2) Adjust VR528 and VR529 so that the waveform becomes minimized.

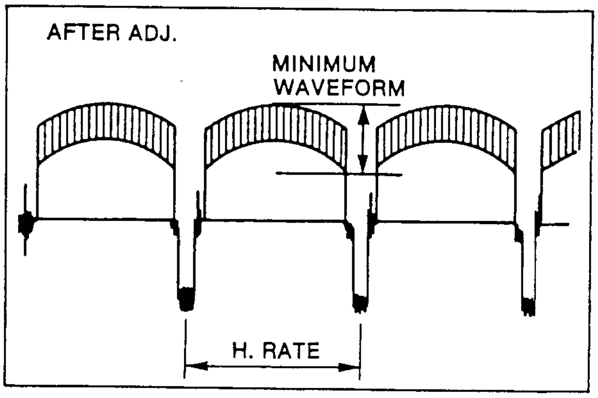

AFTER ADJ.
MINIMUM
WAVEFORM
H. RATE

Fig. C23

HOW TO ATTACH THE FIXTURE

Attach the fixture to the lens and then set the colour temperature conversion filter to fixture.

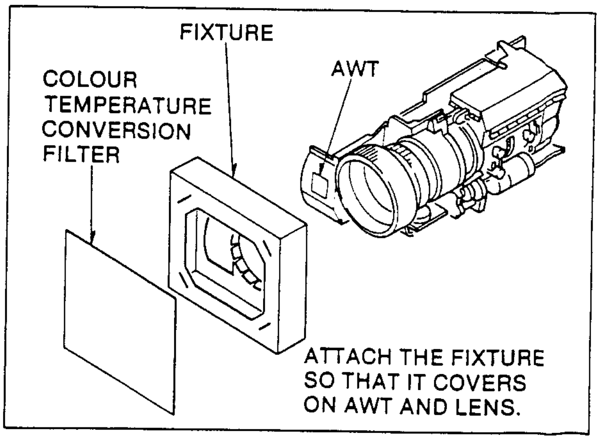

FIXTURE
COLOUR
TEMPERATURE
CONVERSION
FILTER
AWT
ATTACH THE FIXTURE
SO THAT IT COVERS
ON AWT AND LENS.

Fig. C24

HOW TO MAKE A FIXTURE

(1) Print the actual measure at the hard paper referring Fig. C25.
(2) Cut the paper along the solid line.
(3) Apply the past to the oblique line.
(4) Fold the paper along the dotted line.
(5) Construct the fixture referring completion drawing.

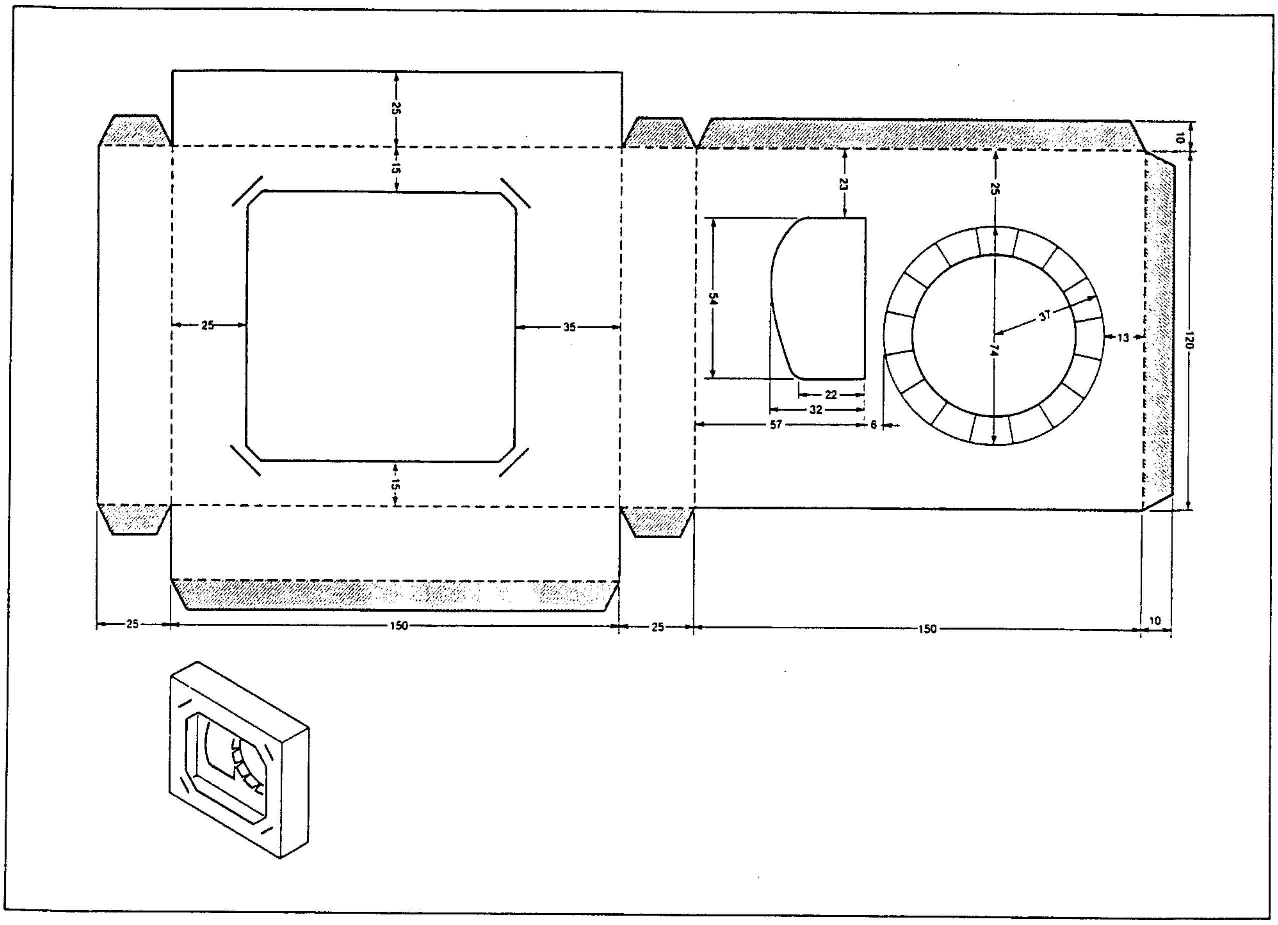


Fig. C25

HOW TO USE THE SUN LIGHT

Incoming light mist be outdoor source (Sun light) only, source and illumination on the sensor must be more than 500Lux, and colour temperature must be within 5000 to 6000 degrees Kelvin.

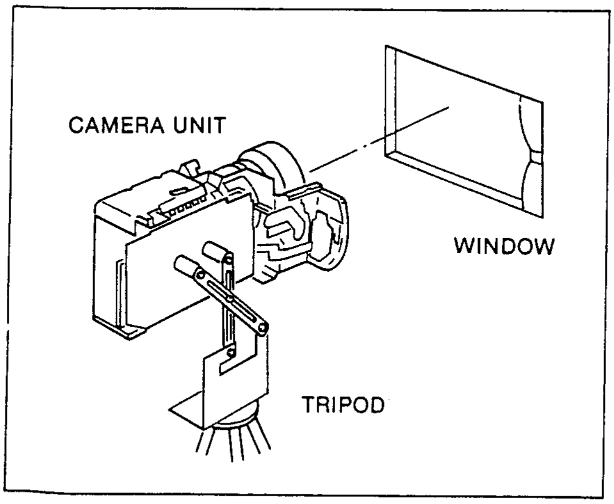


Fig. C26

16. AWB OFFSET ADJUSTMENT WITH OSCILLOSCOPE

<table>
<tr><th>TP</th><th>ADJ.</th><th>IRIS</th><th>CHART</th></tr>
<tr><td>TP511
TP512
TP513</td><td>VR530
VR531</td><td></td><td>WHITE CHART</td></tr>
<tr><th colspan="2">M. EQ.</th><th colspan="2">SPEC.</th></tr>
<tr><td colspan="2">OSCILLOSCOPE</td><td colspan="2">0±0.1V</td></tr>
</table>

Note :

TP511,TP512,TP513,TP519,TP521,VR530,VR531 : Process C.B.A.

(1) Set the White Balance Switch to "INDOOR"
(2) Connect the jumper wire between TP519 and TP521 to make a easy adjustment.
(3) Aim the camera to White Chart.
(4) Connect the oscilloscope to TP512 and GND probe to TP511.
(5) Adjust the VR530 (AWB OFFSET) so that the voltage becomes 0 +− 0.1V at TP512.
(6) Exchange the HOT probe from TP512 to TP513.
(7) Adjust the VR531 (AWB OFFSET) so that the
9:19 voltage becomes 0 +− 0.1V at TP513.

17. COLOUR PHASE AND R-Y/B-Y GAIN ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR310 VR307 VR314 VR313 VR328	NO	COLOUR CHIP CHART
M. EQ.		**SPEC.**	
VECTORSCOPE		Fig. C27	

Note :
TP511,TP512,TP513,VR307,VR310,VR313,VR314, VR328 : Process C.B.A.

(1) Aim the camera at the Colour Chip Chart.
(2) Set the vectorscope for NTSC mode.
(3) Adjust the VR310 (Colour phase control) so that the cracked Red vector comes one.
(4) Set the vectorscope to PAL mode.
(5) Connect the jumper wire among TP511,TP512 and TP513.
(6) Adjust the VR307 and VR308 (Colour phase control), VR313 (R−Y Gain control), VR314 (B−Y Gain control) so that the vector of each colour as shown in Fig. C27.

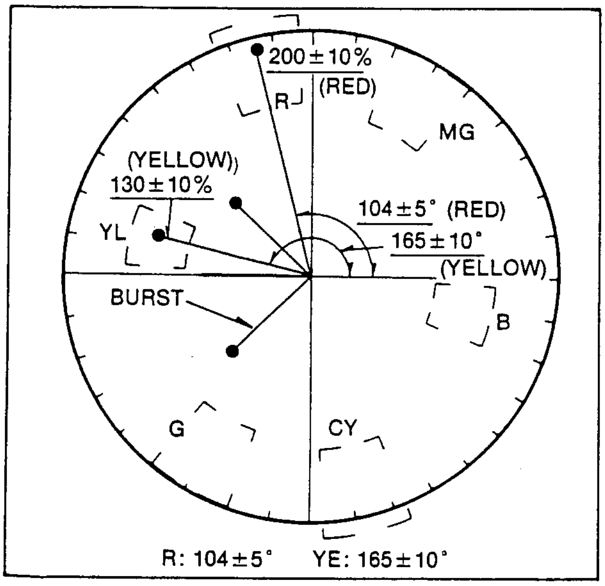


Fig. C27

18. HIGH INTENSITY SUPPRESS (HC) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR309	NO	COLOUR CHART
M. EQ.		**SPEC.**	
TV MONITOR		HALF SIZE (YELLOW) YELLOW COLOUR IS JUST BEFORE CUT OFF	

Note :
VR309 : Process C.B.A.

(1) Aim the camera at the Colour Bar.
(2) Set the horizontal picture frame to 40usec, and memorize the level of Yellow part.
(3) Set the horizontal picture frame to 16usec. (Expand the Yellow part.)
(4) In case that the level of Yellow part is more than 50% compared with the Yellow level of when horizontal picture frame was 40usec, adjust the VR309 (High cut control) so that the level of yellow becomes 50% as shown in Fig. C28.
(5) In case that the level of Yellow part is already less than 50% of when the horizontal picture frame was 40usec, adjust the VR309 until before just Yellow part begins to disappear.

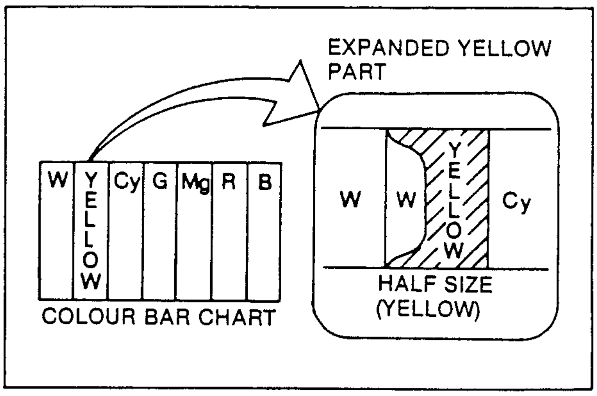


Fig. C28

19. AWT MODE (OFFSET) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR525 VR526	NO	WHITE CHART
M. EQ.		**SPEC.**	
VECTORSCOPE		CENTER OF VECTORSCOPE	
OSCILLOSCOPE		WAVEFORM IS MINIMIZED	

Note :
TP511,TP512,TP513,TP519,TP521,VR525,VR526 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance switch to "AUTO".
(2) Aim the camera at the White Chart.
(3) Supply the video output to vectorscope.
(4) Connect the jumper wire among TP511,TP512 and TP513 to cut the R−Y, B−Y feed back loop.
(5) Connect the jumper wire between TP519 and TP521 to make a easy adjustment.
(6) Adjust the VR525 and VR526 (AWT Offset control) so that the vectors move to centre of screen on vectorscope.

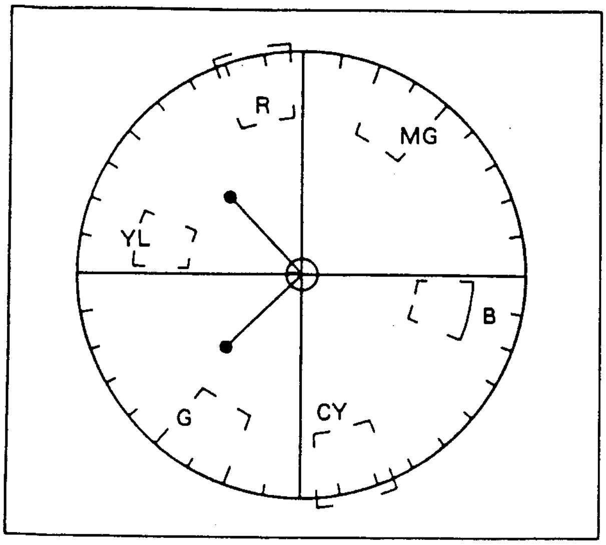


Fig. C29

WITH OSCILLOSCOPE

(1) Adjustment condition and procedures are the same as using vectorscope.
(2) Adjust the VR525 and VR526 so that the waveform becomes minimized.

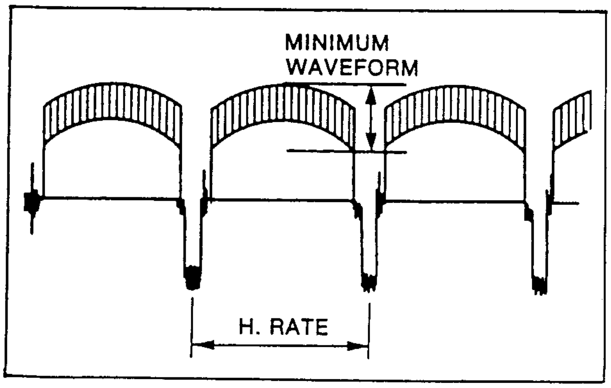


Fig. C30

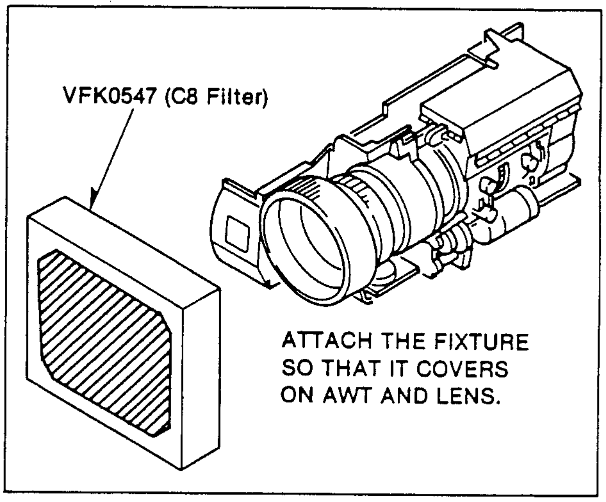
20. AWT MODE (GAIN) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR523 VR527	NO	WHITE CHART
M. EQ.		SPEC.	
VECTORSCOPE		CENTER OF VECTORSCOPE	
OSCILLOSCOPE		WAVEFORM IS MINIMIZED	

Note :
TP511,TP512,TP513,TP519,TP521,VR523,VR527 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance switch to "AUTO".
(2) Aim the camera at the White Chart.
(3) Supply the video output to vectorscope.
(4) Connect the jumper wire among TP511,TP512 and TP513 to cut the R−Y, B−Y feed back loop.
(5) Connect the jumper wire between TP519 and TP521 to make a easy adjustment.
(6) Attach the fixture with colour temperature conversion filter Kodak 80C (C8) to the in front of lens.



ATTACH THE FIXTURE SO THAT IT COVERS ON AWT AND LENS.

Fig. C31

(7) Adjust the VR523 and VR527 ((AWT Gain control) so that the colour vector moves to centre of screen on vectorscope.
(8) Next, remove the fixture with filter from lens and confirm that whether colour vector moves to centre or not. If not, readjust the AWT offset adjustment again and then repeat this adjustment.

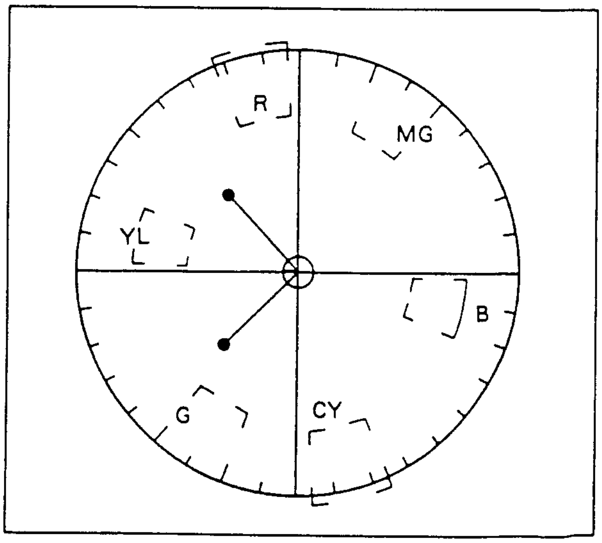


Fig. C29

WITH OSCILLOSCOPE

(1) Adjustment condition and procedures are the same as using vectorscope.
(2) Adjust the VR523 and VR527 so that the waveform becomes minimized.
(3) Confirm the AWT offset mode.

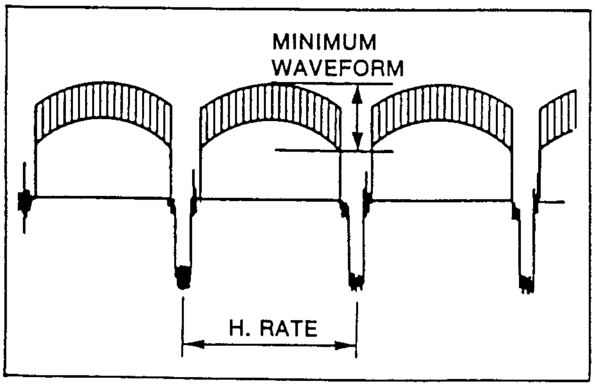


Fig. C33

21. HALL AMP ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP518 TP516 TP521 TP520	VR532 VR533	NO	GRAY SCALE CHART

M. EQ.	SPEC.
D.V.M.	

Note :
TP516,TP518,TP520,TP521,VR532,VR533 : Process C.B.A.

(1) Connect the jumper wire between TP516 and TP521 to iris close.
(2) Adjust the VR532 (Hall amp control) so that the voltage at TP518 becomes 1.74V +– 0.02V.
(3) Exchange the connecting jumper wire from TP521 to TP520 to iris open. (Now connecting TP516 and TP520.)
(4) Adjust the VR533 (Hall amp control) so that the voltage at TP518 becomes 3.72V +– 0.05V.
(5) Confirm the voltage at TP518 by connecting a jumper wire between TP516 and TP521 then if it is out of specification, repeat this adjustment form first item.
(Voltage at TP518 is control by both VR, so even if iris close voltage has adjusted by VR532 correctly, it is changed when iris open voltage is adjusted by VR533. Please consider changing level when you adjust.)

AUTO FOCUS SECTION

Note :
PREPARATION
Camera zoom is positioned at the end of TELE side.

22. AF GATE ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP702 TP703	C703	NO	

M. EQ.	SPEC.
OSCILLOSCOPE	T=9.6±0.4μsec.

Note :
TP702,TP703,C703 : Auto Focus C.B.A.

(1) Connect the oscilloscope to TP702 and TP703 by dual trace mode.
(2) Adjust the C703 (AF Gate control) so that the phase difference becomes 9.6usec +– 0.4usec.

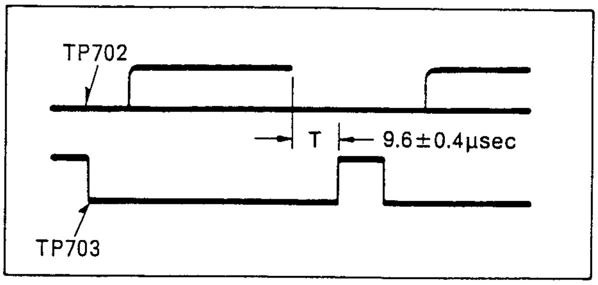


Fig. C34

23. BIMOLF GAIN CONTROL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP704	VR703	YES	

M. EQ.	SPEC.
OSCILLOSCOPE	A=11V±0.5Vp-p

Note :
TP704,VR703 : AF C.B.A.

(1) Set the Focus selector to "MANUAL".
(2) Cover the camera lens with the lens cap.
(3) Connect the oscilloscope to TP704.
(4) Adjust the VR703 (Bimolf gain control) so that the signal level becomes 11V +–0.5Vp–p.

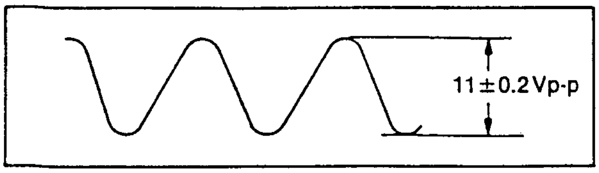


Fig. C35

24. AF VH FREQUENCY ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP705	C737	NO	WHITE/GRAY CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		A=2.80V±0.05V DC-RANGE	

Note :
TP705,TP710,C737 : Auto Focus C.B.A.
TP516,TP520 : Process C.B.A.

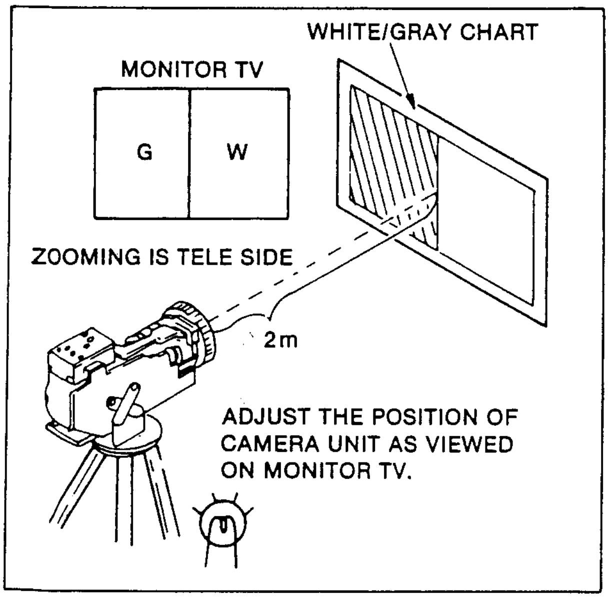

WHITE/GRAY CHART
MONITOR TV
G
W
ZOOMING IS TELE SIDE
2m
ADJUST THE POSITION OF CAMERA UNIT AS VIEWED ON MONITOR TV.

Fig. C36

(1) Set the Focus selector to "AUTO".
(2) Connect the jumper wire between TP516 and TP520 to iris open.
(3) Aim the camera at White/Gray Chart .
(4) Adjust the lighting condition so that level at TP710 becomes 180mV +– 10mVp–p as shown in Fig. C37.

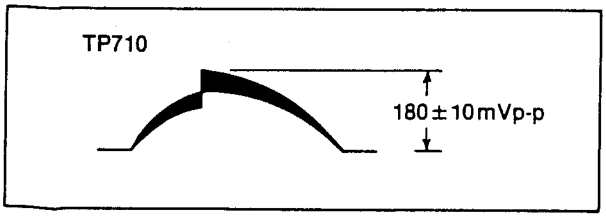

TP710
180±10mVp-p

Fig. C37

(5) Adjust the C737 (AF VH Frequency control) so that DC level at TP705 becomes 2.8V +– 0.05V.

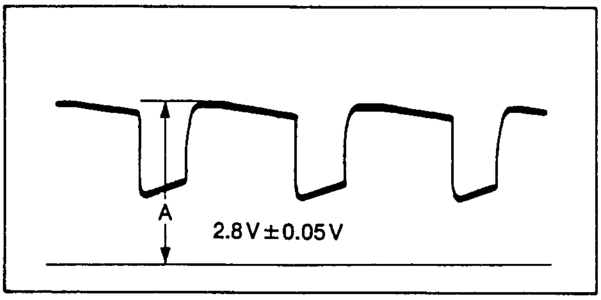


Fig. C38

2-4-2. ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

Note :
PREPARATION
Adjustment of camera section must be completed.
Electric View Finder must be connected to camera unit.

1. H-OSC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
Pin 2 of P701	VR702	NO	BALL CHART
M. EQ.		SPEC.	
FREQUENCY COUNTER		15.9kHz±0.1kHz	

Note :
P701,VR702 : E.V.F. C.B.A.

(1) Connect the frequency counter to Pin2 of P701.
(2) Adjust the VR702 (H–OSC control) so that the frequency becomes 15.9KHz +– 0.1KHz.

2. CENTERING ADJUSTMENT

Note :
Deflection York, Centering Magnet : CRT

(1) Aim the camera at the Ball Chart
(2) Adjust the Deflection york and Centering magnet so that the picture on CRT is centred.

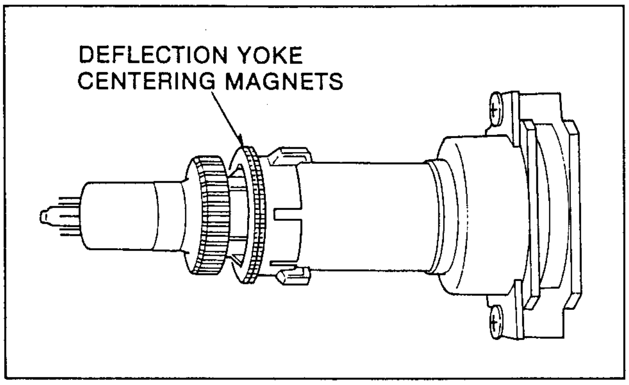


Fig. C39

3. FOCUS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR704	NO	BALL CHART
M. EQ.		**SPEC.**	
VIEWFINDER		BEST RESOLUTION	

Note :
VR704 : E.V.F. C.B.A.

(1) Aim the camera at the Ball Chart.
(2) Adjust the VR704 so that the picture on CRT becomes best resolution.

4. V. SIZE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR701	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
VIEWFINDER		VERTICAL SIZE IS FIXED	

Note :
VR701 : E.V.F. C.B.A.

(1) Aim the camera at the Gray Scale Chart.
(2) Adjust the VR701 (Vertical size control) so that the vertical size becomes correct and picture does not rolling.

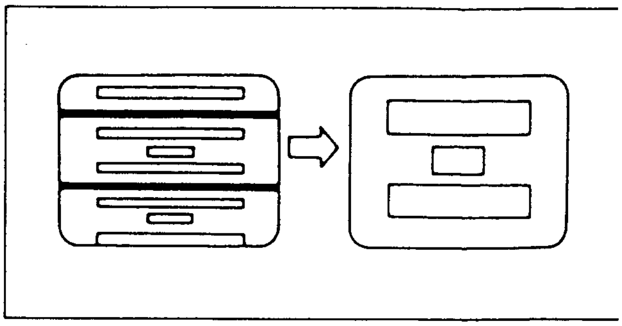


Fig. C40

5. BRIGHTNESS ADJUSTMENT

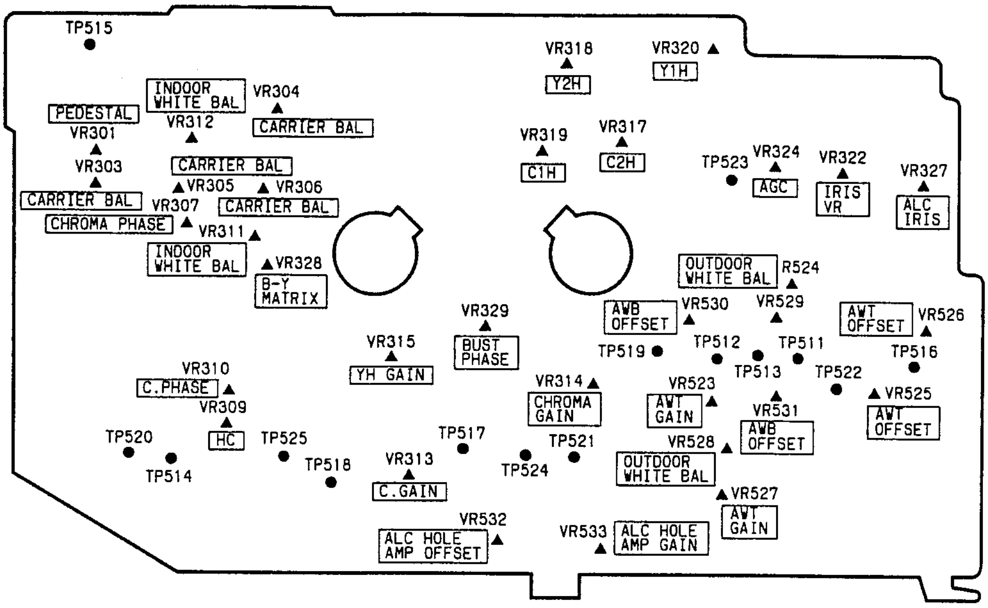
TP	ADJ.	LENS CAP	CHART
	VR705	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
VIEWFINDER		NATURAL GRADATION	

Note :
VR705 : E.V.F. C.B.A.

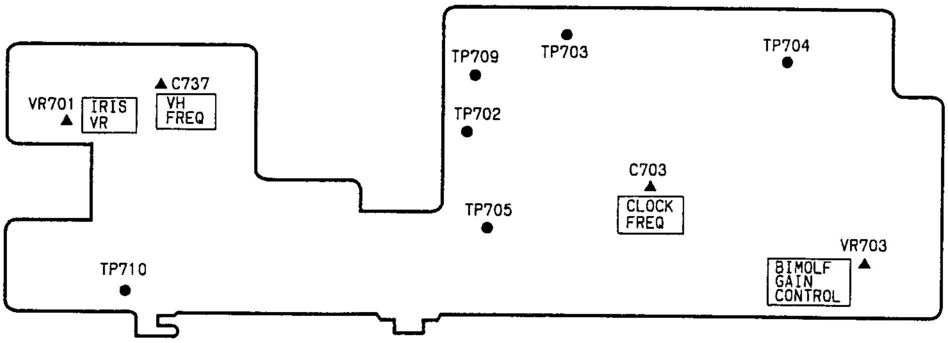
(1) Aim the camera at the Gray Scale Chart.
(2) Adjust the VR705 (Brightness control) so that the brightness for black and white bar on the CRT becomes same as the TV monitor brightness

LOCATION OF TEST POINTS & CONTROLS (1)

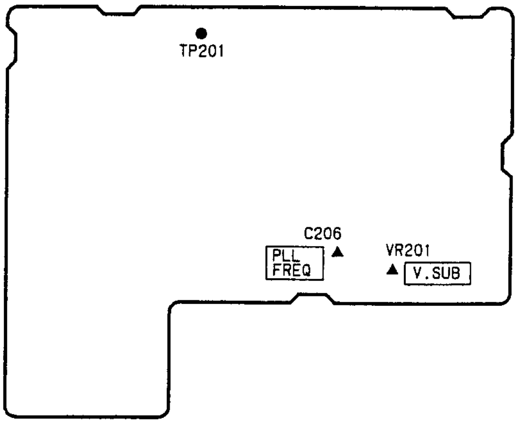
PROCESS C.B.A.


TP515
VR318
Y2H
VR320
Y1H
INDOOR WHITE BAL
VR304
PEDESTAL
VR301
VR312
CARRIER BAL
VR319
VR317
C1H
C2H
VR303
CARRIER BAL
TP523
VR324
AGC
VR322
IRIS VR
VR327
ALC IRIS
VR305
VR306
CARRIER BAL
VR307
CARRIER BAL
CHROMA PHASE
VR311
INDOOR WHITE BAL
VR328
B-Y MATRIX
OUTDOOR WHITE BAL
R524
VR329
AWB OFFSET
VR530
VR529
AWT OFFSET
VR526
VR315
BUST PHASE
TP519
TP512
TP511
TP516
YH GAIN
TP513
TP522
VR310
C.PHASE
VR314
CHROMA GAIN
VR523
AWT GAIN
VR531
AWB OFFSET
VR525
AWT OFFSET
VR309
TP520
HC
TP525
TP517
TP521
VR528
OUTDOOR WHITE BAL
TP514
TP518
VR313
C.GAIN
TP524
VR527
AWT GAIN
VR532
ALC HOLE AMP OFFSET
VR533
ALC HOLE AMP GAIN

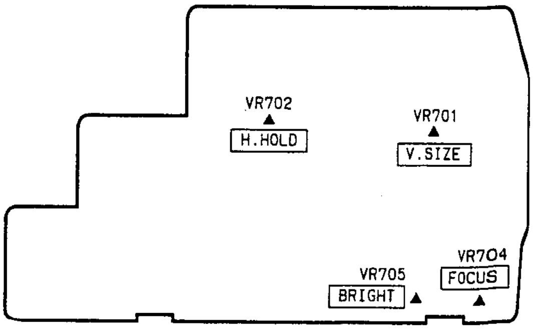
AUTO FOCUS C.B.A.


TP709
TP703
TP704
C737
VR701
IRIS VR
VH FREQ
TP702
C703
TP705
CLOCK FREQ
VR703
BIMOLF GAIN CONTROL
TP710

SENSOR C.B.A.

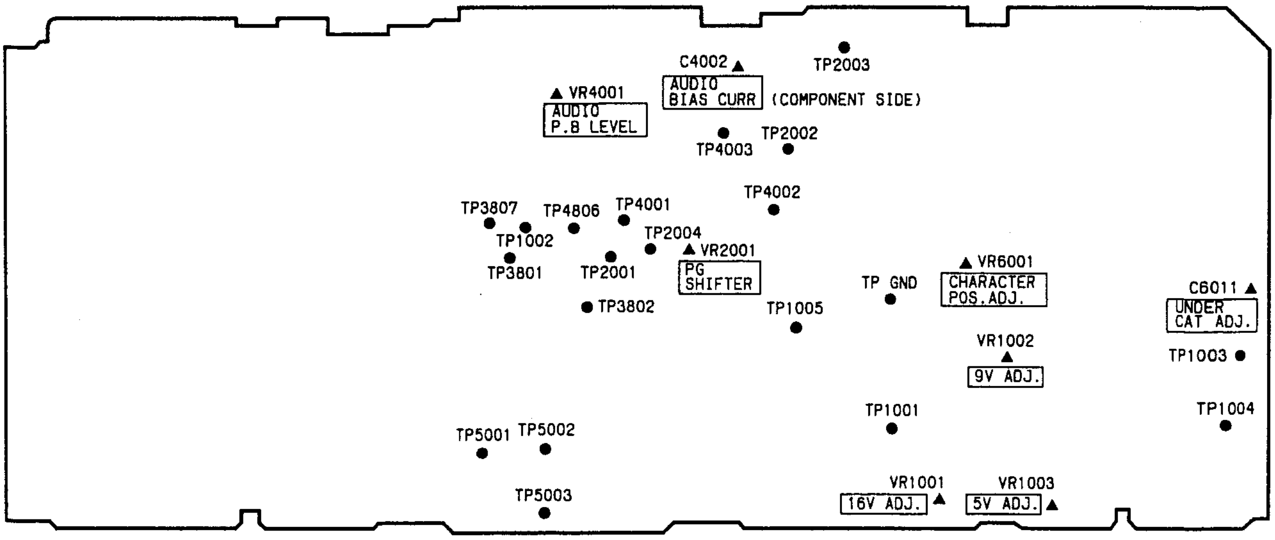

TP201
C206
PLL FREQ
VR201
V.SUB

E.V.F. C.B.A.

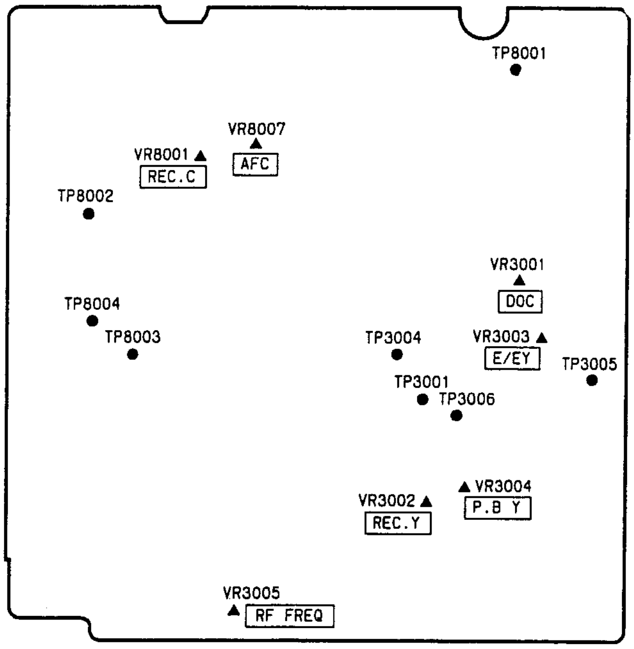

VR702
H.HOLD
VR701
V.SIZE
VR704
FOCUS
VR705
BRIGHT

LOCATION OF TEST POINTS & CONTROLS (2)

MAIN C.B.A.


C4002
TP2003
VR4001
AUDIO BIAS CURR
(COMPONENT SIDE)
AUDIO P.B LEVEL
TP4003
TP2002
TP4002
TP3807
TP4806
TP4001
TP1002
TP2004
VR2001
TP3801
TP2001
PG SHIFTER
VR6001
TP GND
CHARACTER POS.ADJ.
C6011
TP3802
TP1005
UNDER CAT ADJ.
VR1002
TP1003
9V ADJ.
TP1001
TP1004
TP5001
TP5002
TP5003
VR1001
VR1003
16V ADJ.
5V ADJ.

LUMINANCE & CHROMINANCE C.B.A.


TP8001
VR8007
VR8001
AFC
REC.C
TP8002
VR3001
DOC
TP8004
TP8003
TP3004
VR3003
E/EY
TP3005
TP3001
TP3006
VR3004
VR3002
P.B Y
REC.Y
VR3005
RF FREQ

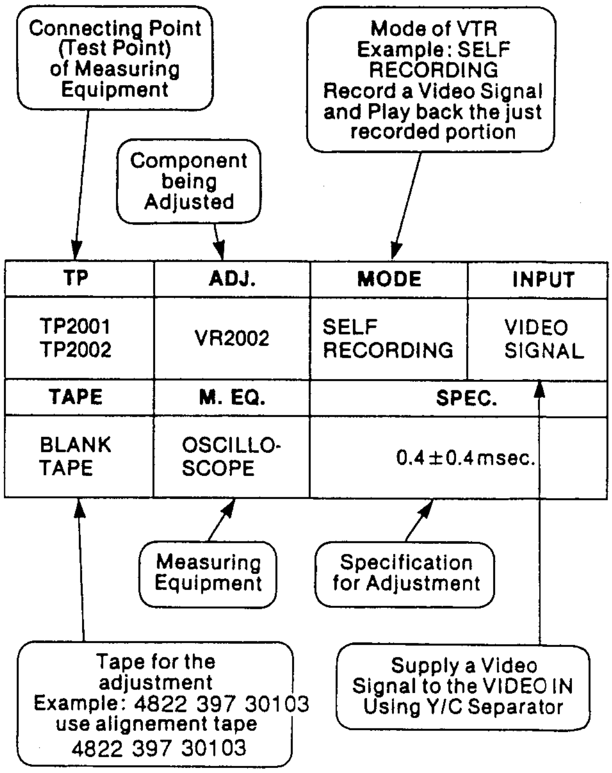
2-4-3. ELECTRICAL ADJUSTMENT FOR VTR SECTION

The following equipments are required for adjustment of the VHS Movie VKR6855

(1) V.T.V.M. (Vacuum Tube Volt Meter)
D.V.M. (Digital Volt Meter)
(2) Dual trace Oscilloscope
*Voltage range : 0.06 ~ 50V/div.
*Probe : 10:1 or 1:1
(3) Frequency Counter
*Frequency range : 0 ~ 10MHz
(4) Signal Generator (Sine wave)
*Frequency range : 0 ~ 10MHz
(5) Video Sweep Generator
(6) Colour monitor TV
(7) Plastic tip driver
(8) VHS Alignment tape 4822 397 30103
(9) VHS Blank tape
(10) Pattern generator
(11) Y/C Separator 4822 395 90255
(12) Extension cable 4822 321 22748
(13) Y/C Separator connector 4822 321 23181

PREPARATION
(1) Remove the casing panels.
(2) Connect the Y/C Separator 395 90255 to P3803 on the Main C.B.A. through Connector 321 23181 and extension cable 4822 321 22748
(3) Supply the video signal to the unit through the Y/C Separator 4822 395 90255
(4) Supply the audio signal to audio circuit through the external microphone socket.

HOW TO THE ADJUSTMENT PROCEDURES


Connecting Point
(Test Point)
of Measuring
Equipment
Component
being
Adjusted
Mode of VTR
Example: SELF
RECORDING
Record a Video Signal
and Play back the just
recorded portion
Measuring
Equipment
Specification
for Adjustment
Tape for the
adjustment
Example: 4822 397 30103
use alignement tape
4822 397 30103
Supply a Video
Signal to the VIDEO IN
Using Y/C Separator

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO- SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. E1

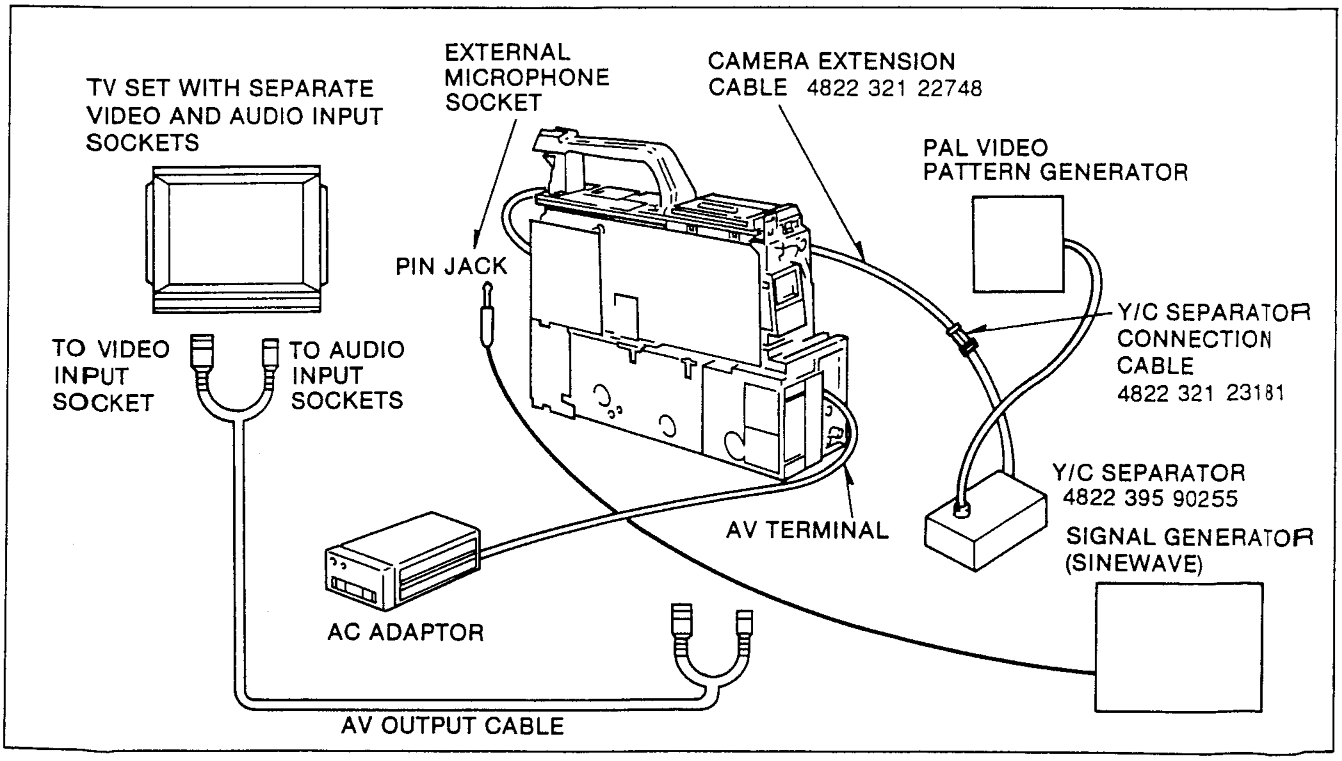

TV SET WITH SEPARATE
VIDEO AND AUDIO INPUT
SOCKETS
EXTERNAL
MICROPHONE
SOCKET
CAMERA EXTENSION
CABLE 4822 321 22748
PAL VIDEO
PATTERN GENERATOR
PIN JACK
TO VIDEO
INPUT
SOCKET
TO AUDIO
INPUT
SOCKETS
Y/C SEPARATOR
CONNECTION
CABLE
4822 321 23181
Y/C SEPARATOR
4822 395 90255
SIGNAL GENERATOR
(SINEWAVE)
AV TERMINAL
AC ADAPTOR
AV OUTPUT CABLE

Fig. E2

POWER SECTION

1. REG. 5V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1003	VR1003	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.96±0.025V	

Note :
Camera unit should be connected to main C.B.A. during Power REG. adjustment (REG. 5V, REG. 9V and Camera REG. 16V)

2. REG. 9V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1002	VR1002	CAMERA RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	$8.62^{+0.07V}_{-0.03V}$	

3. CAMERA REG. 16V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1001	VR1001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	15.2±0.3V	

Note :
REG. 5V, REG 9V adjustment should be completed before this adjustment.

SERVO SECTION

4. PG SHIFTER ADJSUTMENT

TP	ADJ.	MODE	INPUT
TP2001 VIDEO OUT	VR2001	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE 4822 397 30103	OSCILLO-SCOPE	6.5H±0.5H	

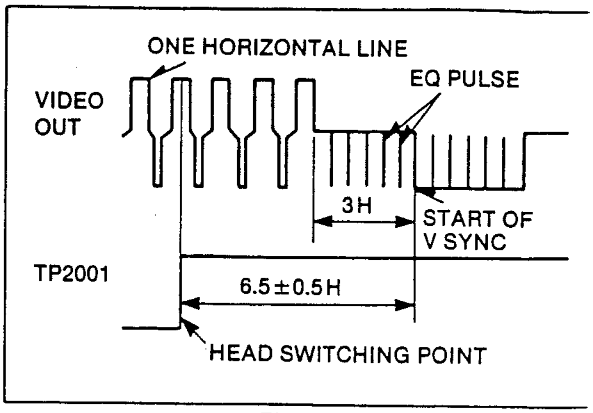


Fig. E3

LUMINANCE & CHROMINANCE SECTION

5. E-E LEVEL ADJSUTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3003	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	A=1.0±0.05Vp-p (75Ω Terminated)	

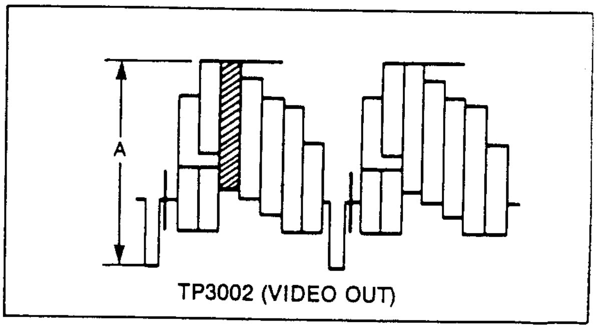


Fig. E4

6. AFC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP8004	VR8007	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	623±15kHz	

(1) Connect the jumper wire among TP8002,TP8003 and TP8001 (GND).
(2) Connect the frequency counter to TP8004.
(3) Adjust the VR8007 so that the frequency becomes 623KHz +– 15KHz.

7. REC CHROMA LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
P5003-2 (GND) P5003-1 (HOT)	VR8001	REC/PLAY	COLOUR BAR (W/WHITE WINDOW)
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	44±5mVp-p	

(1) Connect the oscilloscope to TP5003 (HOT) and TP5002 (GND).
(2) Eliminate luminance recording current by turning VR3002.
(3) Adjust VR8001 so that the Chrominance recording current become 44mV+–5mVp–p.

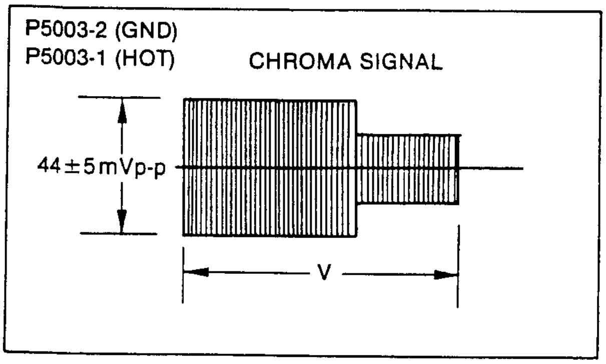


Fig. E5

8. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
P5003-2 (GND) P5003-1 (HOT)	VR3002	REC/PLAY	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	150mV±5mVp-p	

(1) Connect the oscilloscope to TP5003 (HOT) and TP5002 (GND).
(2) Adjust the VR3002 so that the luminance recording current becomes 150+–5mVp–p.

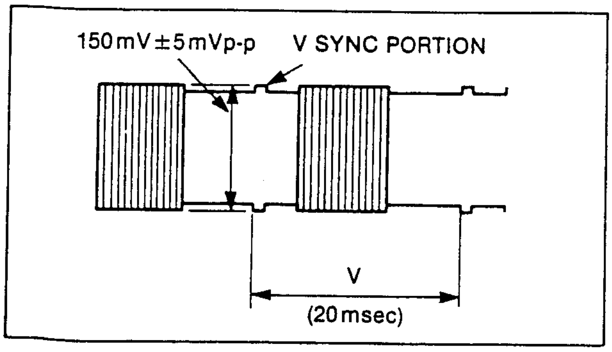


Fig. E6

9. LINE NOISE CANCEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3004	VR3001	SELF RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	Minimum as possible	

(1) Record the video signal.
(2) Connect the oscilloscope to TP3004.
(3) Playback the just recorded portion.
(4) Adjust the VR3001 so that the level between sync tip and white peak becomes minimum as possible.

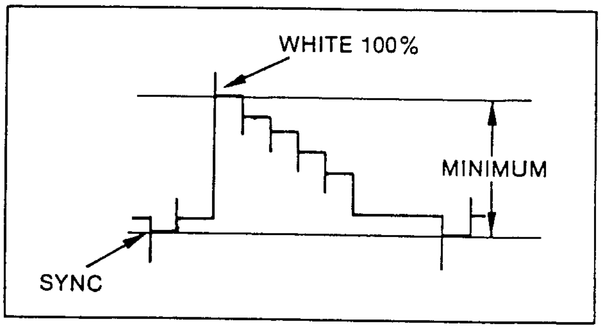


Fig. E7

10. VIDEO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3004	SELF RECORDING	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	A=1.0±0.05Vp-p	

(1) Record the colour bar and playback the just recorded portion.
(2) Connect the oscilloscope to video out.
(3) Adjust the VR3004 so that the out put level becomes 1.0V +– 0.05Vp–p.

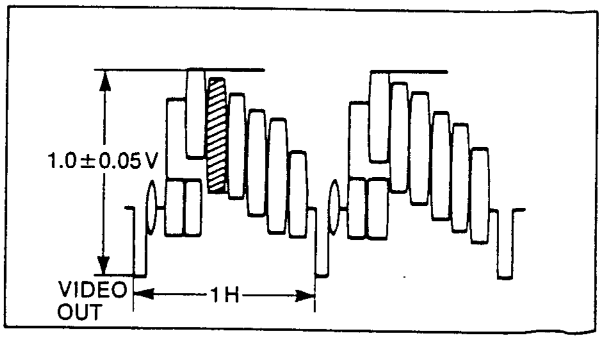


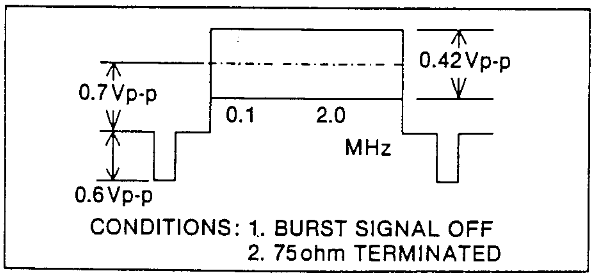
Fig. E8

11. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3005	SELF RECORDING	VIDEO SWEEP SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VIDEO SWEEP/ OSCILLO-SCOPE	A: 0±2dB (80~125%)	

Note :
Edit switch should be "OFF"

(1) Set the video sweep generator as shown in Fig. E9.



CONDITIONS: 1. BURST SIGNAL OFF
2. 75ohm TERMINATED

Fig. E9

(2) Record the sweep signal and playback just recorded portion.
(3) Adjust the VR3005 so that the level at 2MHz becomes 0 +- 2dB comparing with the level at 0.1MHz as shown in Fig. E10.

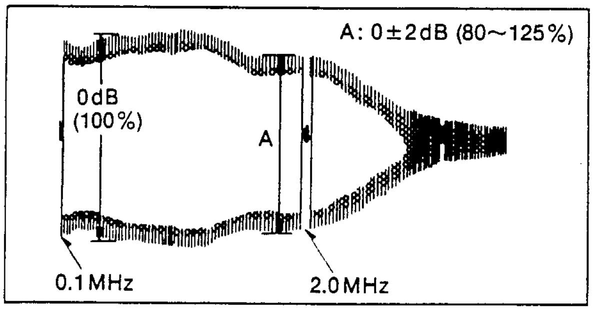


Fig. E10

AUDIO SECTION

12. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT	VR4001	SELF RECORDING	1kHz AUDIO 0dB SIGNAL/ VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERATOR/ D.V.M.	−8.0dBV±1dB	

(1) Supply the audio signal (1KHz/−10dB Sine wave) to audio circuit through external microphone socket.
(2) Record the audio signal and playback just recorded portion.
(3) Adjust VR4001 so that the audio level becomes −8dBV +− 1dB.

13. AUDIO BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4002	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	2.7mVrms±0.1mVrms	

SYSTEM CONTROL SECTION

14. UNDER CUT ADJUSTMENT

TP	ADJ.	MODE	INPUT
Pin 6 of P6011	VR6001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE/ DC POWER SUPPLY/ D.V.M.		

Note :
Do not connect AC adaptor, supply the DC voltage (10.5V +− 0.05V) to Pin1 of P1001 (HOT) and Pin2 of P1001 (GND).
Connect the Diode (MA165) Pin1 of P6011 for Cathode and Pin2 of P6011 for Anode to make Recording mode.

(1) Turn the Power SW to ON.
(2) Adjust the VR6001 so that the waveform is disappeared.

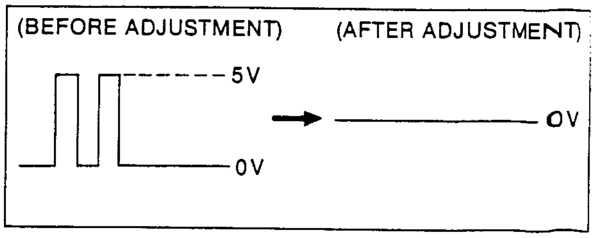


Fig. E11

15. CHARACTER POSITION ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIEW FINDER	C6011	STOP	☒
TAPE	**M. EQ.**	**SPEC.**	
☒	VIEW FINDER	CHARACTER IS CENTRE	

(1) Connect the E.V.F. unit to the Main unit.
(2) Display the tape counter on the E.V.F.
(3) Adjust the C6011 so that the character comes centre.

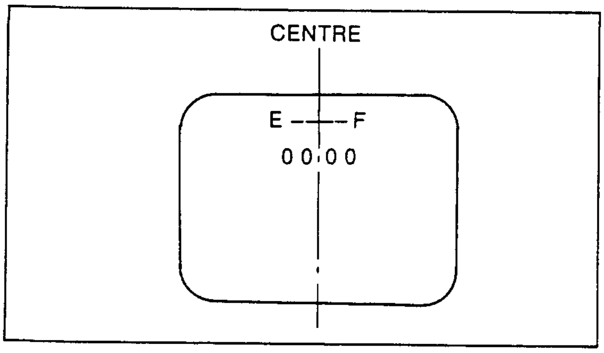


Fig.E12

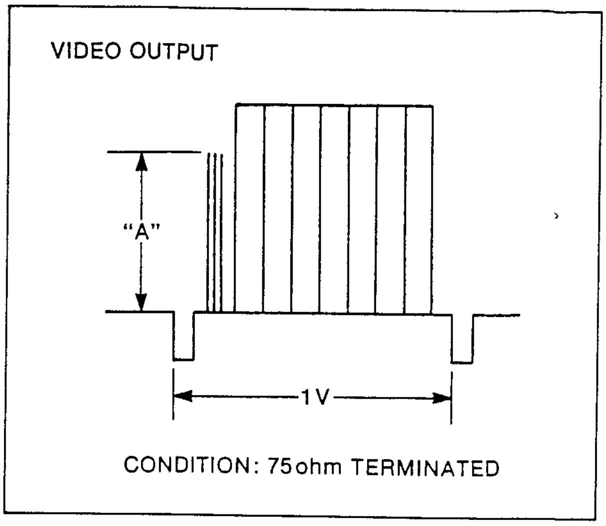


Fig. E13

VITC SECTION

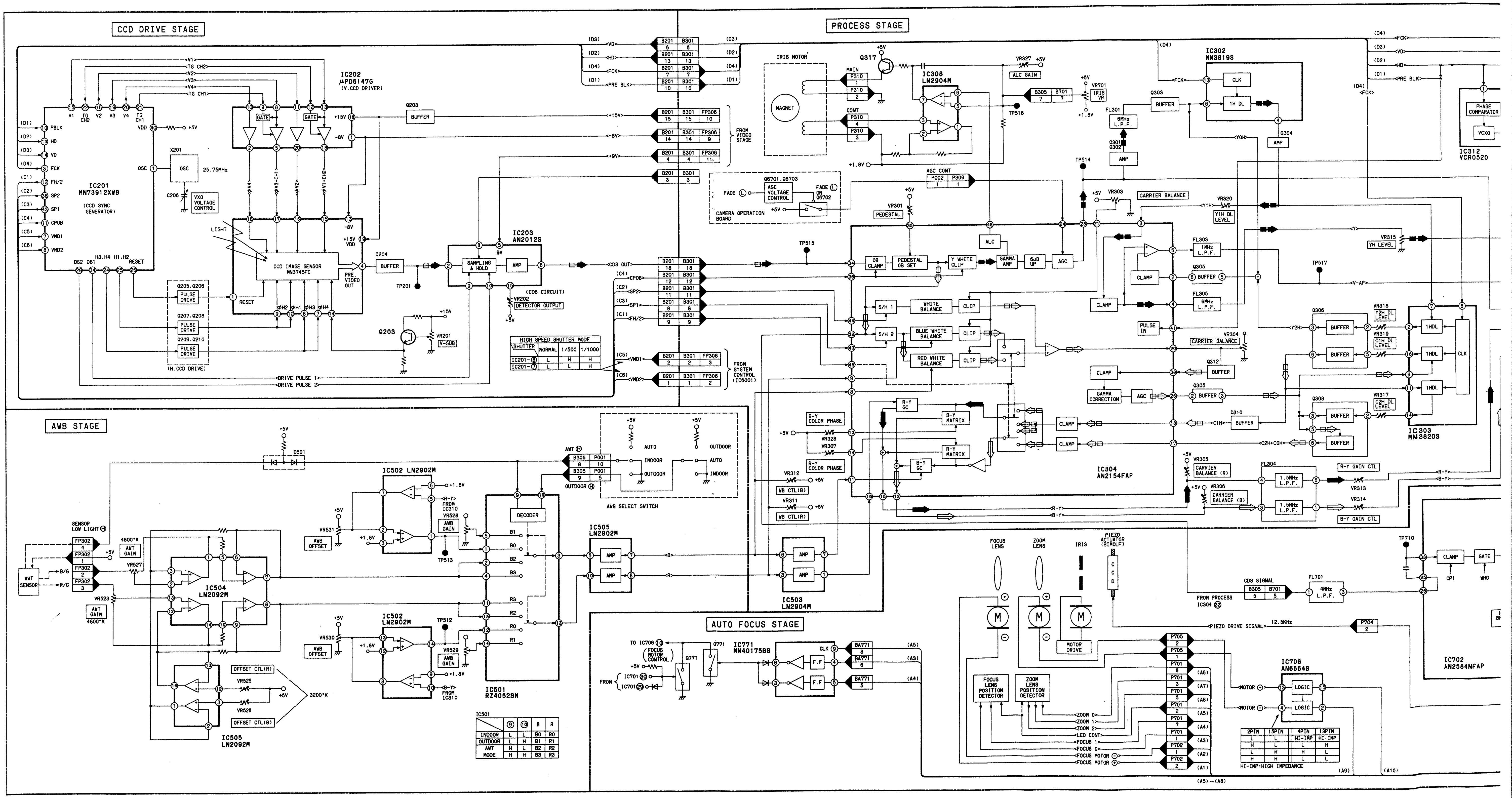
16. VITC ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3801	STOP	VITC SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
☒	VITC GEN/ OSCILLO-SCOPE	$A=540\pm20$ (mVp-p)	

(1) Aim the camera at the gray scale chart.
(2) Adjust the focus at the in focus portion.
(3) Connect the VITC generator.
(4) Connect the oscilloscope to video output.
(5) Adjust the VR3801 so that the signal level "A" is 540+–20mVp–p as shown in Fig. E13.

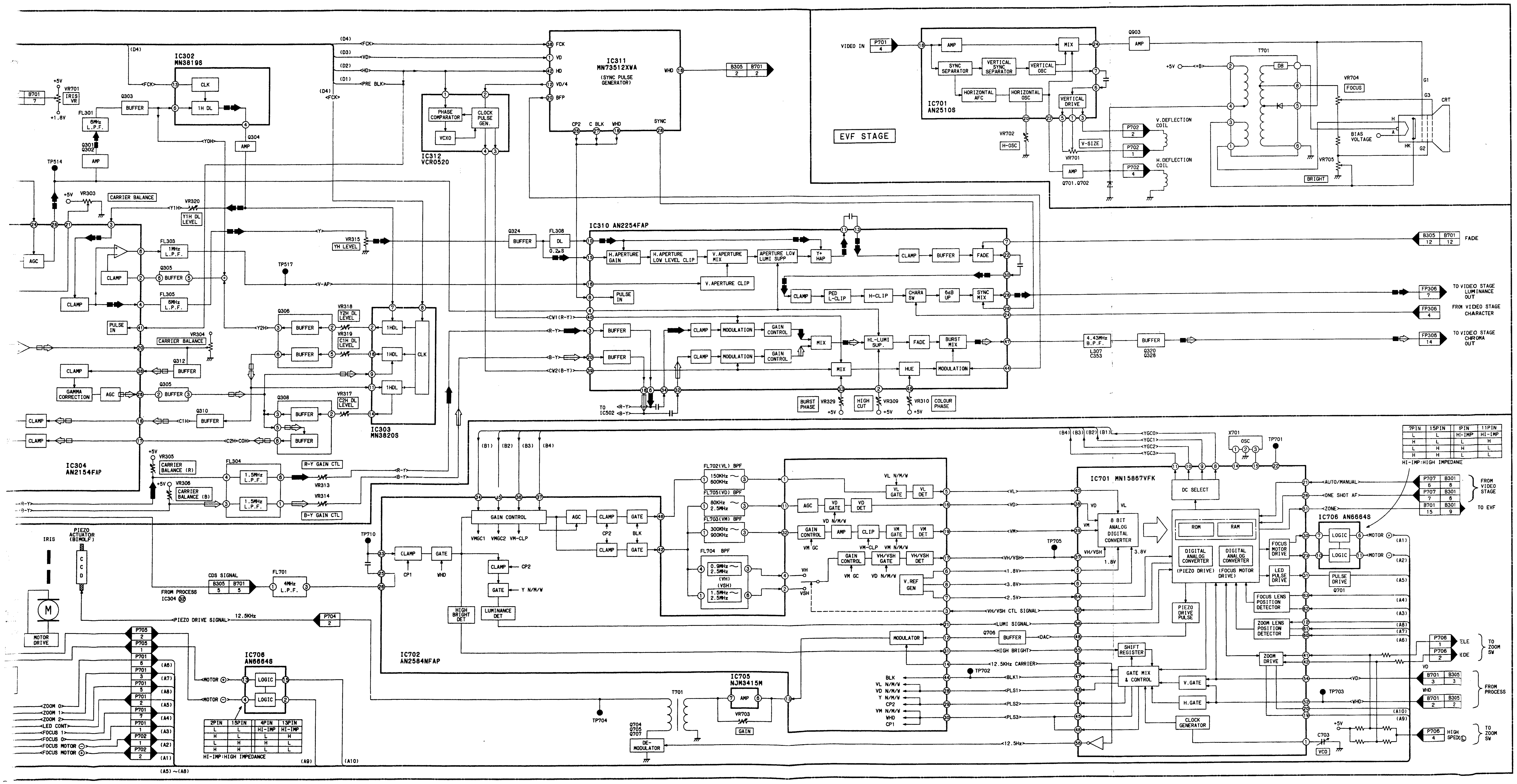
SECTION 3
BLOCK DIAGRAM & SCHEMATIC DIAGRAM
3-1. CAMERA STAGE BLOCK DIAGRAM

◀■ LUMINANCE SIGNAL
◀□ PRE VIDEO SIGNAL
◁■ CHROMINANCE SIGNAL
◁□ B-Y/R-Y COMPOSITE SIGNAL
◀ R-Y SIGNAL
◁ B-Y SIGNAL


CCD DRIVE STAGE
IC201 MN73912XWB (CCD SYNC GENERATOR)
IC202 μPD6147G (V.CCD DRIVER)
CCD IMAGE SENSOR MN3745FC
IC203 AN2012S (CDS CIRCUIT)
SAMPLING & HOLD
VXO VOLTAGE CONTROL
X201 25.75MHz
PULSE DRIVE
(H.CCD DRIVE)
VR201 V-SUB
VR202 DETECTOR OUTPUT
HIGH SPEED SHUTTER MODE
SHUTTER NORMAL 1/500 1/1000
IC201-⑧ L H H
IC201-⑦ L L H
FROM VIDEO STAGE
FROM SYSTEM CONTROL (IC8001)
PROCESS STAGE
IRIS MOTOR
IC308 LN2904M
CAMERA OPERATION BOARD
AGC VOLTAGE CONTROL
FADE
ALC GAIN
PEDESTAL
OB CLAMP
PEDESTAL OB SET
Y WHITE CLIP
GAMMA AMP
6dB UP
AGC
S/H 1
S/H 2
WHITE BALANCE
BLUE WHITE BALANCE
RED WHITE BALANCE
CLIP
B-Y COLOR PHASE
R-Y COLOR PHASE
B-Y MATRIX
R-Y MATRIX
R-Y GC
B-Y GC
WB CTL(B)
WB CTL(R)
GAMMA CORRECTION
IC304 AN2154FAP
IC302 MN3819S
1H DL
CLK
FL301 6MHz L.P.F.
FL303 1MHz L.P.F.
FL305 6MHz L.P.F.
CARRIER BALANCE
YH LEVEL
Y1H DL LEVEL
Y2H DL LEVEL
C1H DL LEVEL
C2H DL LEVEL
IC303 MN3820S
1HDL
FL304 1.5MHz L.P.F.
R-Y GAIN CTL
B-Y GAIN CTL
CARRIER BALANCE (R)
CARRIER BALANCE (B)
IC312 VCR0520
PHASE COMPARATOR
VCXO
AWB STAGE
AWT SENSOR
SENSOR LOW LIGHT
AWT GAIN
IC504 LN2092M
IC505 LN2092M
IC502 LN2902M
AWB OFFSET
AWB GAIN
OFFSET CTL(R)
OFFSET CTL(B)
3200°K
4600°K
DECODER
IC501 RZ40528M
AWB SELECT SWITCH
AUTO
INDOOR
OUTDOOR
IC505 LN2902M
IC503 LN2904M
AMP
IC501
⑨ ⑩ B R
INDOOR L L B0 R0
OUTDOOR L H B1 R1
AWT H L B2 R2
MODE H H B3 R3
AUTO FOCUS STAGE
IC771 MN40175BS
F.F
Q771
TO IC706 (FOCUS MOTOR CONTROL)
FROM IC701
FOCUS LENS
ZOOM LENS
IRIS
PIEZO ACTUATOR (BIMOLF)
MOTOR DRIVE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IC706 AN6664S
LOGIC
MOTOR
2PIN 15PIN 4PIN 13PIN
L L HI-IMP HI-IMP
H L L H
L H H L
H H L L
HI-IMP:HIGH IMPEDANCE
CDS SIGNAL
FROM PROCESS IC304
FL701 4MHz L.P.F.
PIEZO DRIVE SIGNAL 12.5KHz
CLAMP
GATE
IC702 AN2584NFAP

CHROMINANCE SIGNAL ◀ R-Y SIGNAL

B-Y/R-Y COMPOSITE SIGNAL ◁ B-Y SIGNAL


IC302 MN3819S
CLK
1H DL
BUFFER
Q303
FL301 6MHz L.P.F.
Q301 Q302 AMP
Q304 AMP
B701 7
VR701 IRIS VR
+5V
+1.8V
TP514
VR303 CARRIER BALANCE
VR320 Y1H DL LEVEL
FL303 1MHz L.P.F.
Q305 BUFFER
FL305 6MHz L.P.F.
CLAMP
AGC
PULSE IN
VR304 CARRIER BALANCE
Q312 BUFFER
GAMMA CORRECTION
Q310 BUFFER
IC304 AN2154FAP
VR305 CARRIER BALANCE (R)
VR306 CARRIER BALANCE (B)
FL304 1.5MHz L.P.F.
R-Y GAIN CTL
B-Y GAIN CTL
VR313
VR314
TP517
VR315 YH LEVEL
Q306 BUFFER
Q308 BUFFER
VR318 Y2H DL LEVEL
VR319 C1H DL LEVEL
VR317 C2H DL LEVEL
IC303 MN3820S
1HDL
CLK
IC312 VCR0520
PHASE COMPARATOR
CLOCK PULSE GEN.
VCXO
IC311 MN73512XWA (SYNC PULSE GENERATOR)
FCK VD HD VD/4 BFP
WHD SYNC CP2 C BLK
B305 2 B701 2
Q324 BUFFER
FL308 DL 0.2μS
IC310 AN2254FAP
H.APERTURE GAIN
H.APERTURE LOW LEVEL CLIP
V.APERTURE MIX
APERTURE LOW LUMI SUPP
Y+ HAP
V.APERTURE CLIP
PULSE IN
CLAMP BUFFER FADE
PED L-CLIP
H-CLIP
CHARA SW
6dB UP
SYNC MIX
MODULATION
GAIN CONTROL
MIX
HL-LUMI SUP.
BURST MIX
HUE
BURST PHASE VR329
HIGH CUT VR309
VR310 COLOUR PHASE
TO IC502 <R-Y> <B-Y>
B305 12 B701 12 FADE
FP306 7 TO VIDEO STAGE LUMINANCE OUT
FP306 4 FROM VIDEO STAGE CHARACTER
4.43MHz B.P.F. L307 C353
BUFFER Q320 Q328
FP306 14 TO VIDEO STAGE CHROMA OUT
EVF STAGE
VIDEO IN P701 4
IC701 AN2510S
AMP MIX
SYNC SEPARATOR
VERTICAL SYNC SEPARATOR
VERTICAL OSC
HORIZONTAL AFC
HORIZONTAL OSC
VERTICAL DRIVE
VR702 H-OSC
VR701 V-SIZE
Q701,Q702 AMP
P702 2 P702 1 P702 4
V.DEFLECTION COIL
H.DEFLECTION COIL
Q903 AMP
T701 DB
VR704 FOCUS
BIAS VOLTAGE
VR705 BRIGHT
G1 G3 CRT H A HK G2
IRIS
PIEZO ACTUATOR (BIMOLF)
CCD
MOTOR DRIVE
FROM PROCESS IC304
CDS SIGNAL B305 5 B701 5
FL701 4MHz L.P.F.
PIEZO DRIVE SIGNAL 12.5KHz
P704 2
P705 2 P705 1 P701 6 P701 3 P701 7 P701 5 P702 7 P701 2 P701 7 P701 1 P702 1 P702 2
<ZOOM 0> <ZOOM 1> <ZOOM 2> <LED CONT> <FOCUS 1> <FOCUS 0> <FOCUS MOTOR ⊖> <FOCUS MOTOR ⊕>
IC706 AN6664S
LOGIC
<MOTOR ⊕> <MOTOR ⊖>
HI-IMP:HIGH IMPEDANCE
(A1) ~ (A9) (A10)
TP710
CLAMP GATE CP1 WHD
GAIN CONTROL
VMGC1 VMGC2 VM-CLP
AGC CLAMP GATE CP2 BLK
CLAMP CP2
GATE Y N/M/W
HIGH BRIGHT DET
LUMINANCE DET
IC702 AN2584NFAP
FL702(VL) BPF 150KHz ~ 600KHz
FL705(VD) BPF 80KHz ~ 2.5MHz
FL703(VM) BPF 300KHz ~ 900KHz
FL704 BPF 0.9MHz ~ 2.5MHz (VH) (VSH) 1.5MHz ~ 2.5MHz
VL N/M/W VL GATE VL DET
AGC VD GATE VD DET
GAIN CONTROL AMP CLIP VM GATE VM DET
GAIN CONTROL VH/VSH GATE VH/VSH DET
V.REF GEN
MODULATOR
TP704
T701
IC705 NJM3415M AMP VR703 GAIN
Q704 Q705 Q707 DE-MODULATOR
BLK VL N/M/W VD N/M/W Y N/M/W CP2 VM N/M/W WHD CP1
TP702
Q706 BUFFER
<VL> <VD> <VM> <VH/VSH> <1.8V> <3.8V> <2.5V> <VH/VSH SIGNAL> <LUMI SIGNAL> <DAC> <HIGH BRIGHT> <12.5KHz CARRIER> <BLK1> <PLS1> <PLS2> <PLS3> <12.5Hz>
TP705
IC701 MN15867VFK
X701 OSC TP701
<YGC0> <YGC1> <YGC2> <YGC3>
DC SELECT
8 BIT ANALOG DIGITAL CONVERTER
ROM RAM
DIGITAL ANALOG CONVERTER (PIEZO DRIVE)
DIGITAL ANALOG CONVERTER (FOCUS MOTOR DRIVE)
FOCUS MOTOR DRIVE
LED PULSE DRIVE
PULSE DRIVE Q701
PIEZO DRIVE PULSE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
ZOOM DRIVE
SHIFT REGISTER
GATE MIX & CONTROL
V.GATE
H.GATE
CLOCK GENERATOR
C703 VCO
TP703
IC706 AN6664S LOGIC
<AUTO/MANUAL> <ONE SHOT AF> <ZONE> <MOTOR ⊕> <MOTOR ⊖>
P707 6 B301 8
P707 7 B301 6
FROM VIDEO STAGE
B701 15 B301 9 TO EVF
P706 1 TELE P706 2 WIDE TO ZOOM SW
VD B701 3 B305 3 WHD B701 2 B305 2 FROM PROCESS
P706 4 HIGH SPEED TO ZOOM SW

2PIN	15PIN	4PIN	13PIN
L	L	HI-IMP	HI-IMP
H	L	L	H
L	H	H	L
H	H	L	L

HI-IMP:HIGH IMPEDANCE

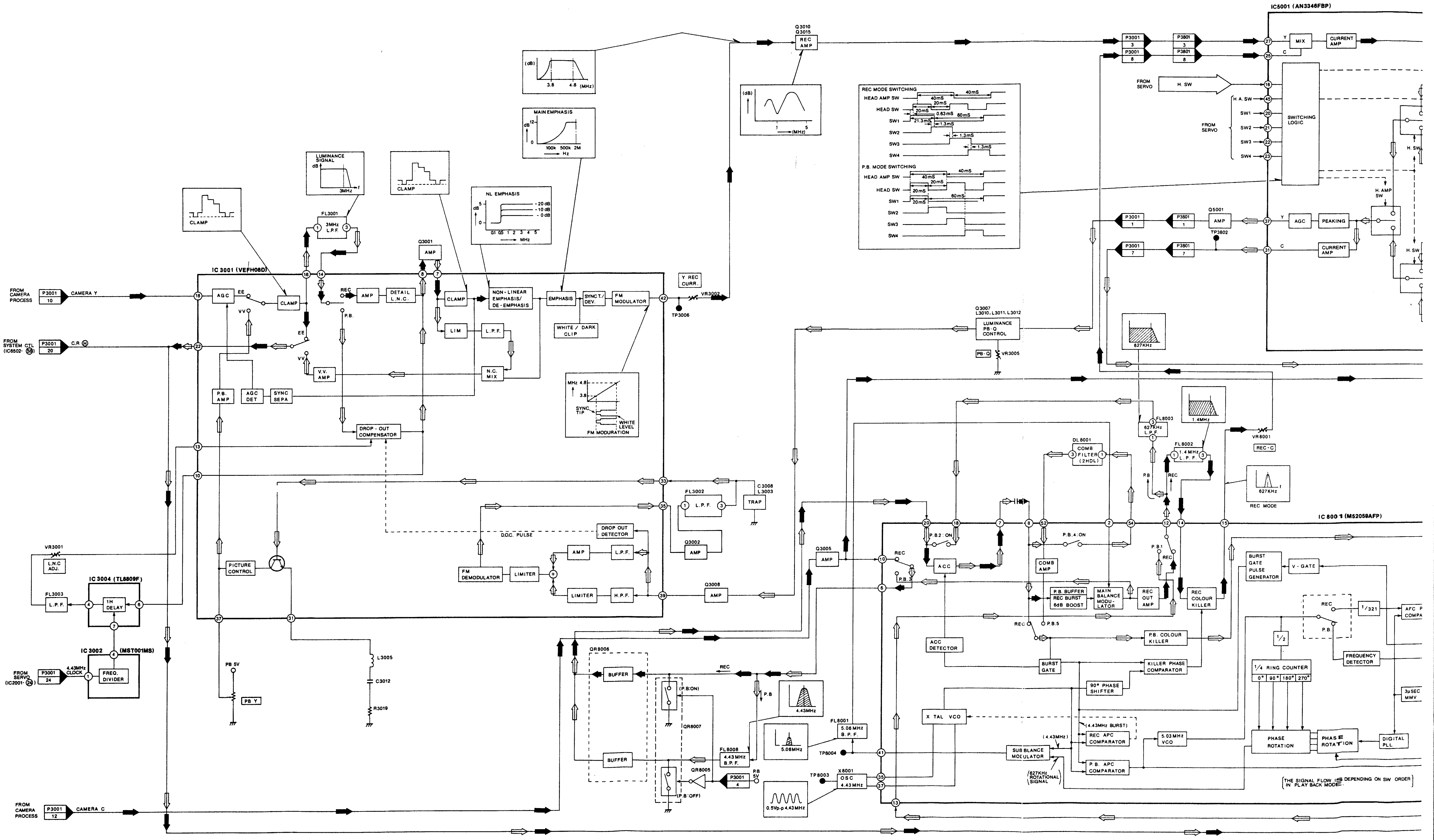
7PIN	15PIN	6PIN	11PIN
L	L	HI-IMP	HI-IMP
H	L	L	H
L	H	H	L
H	H	L	L

HI-IMP:HIGH IMPEDANCE

3-2. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

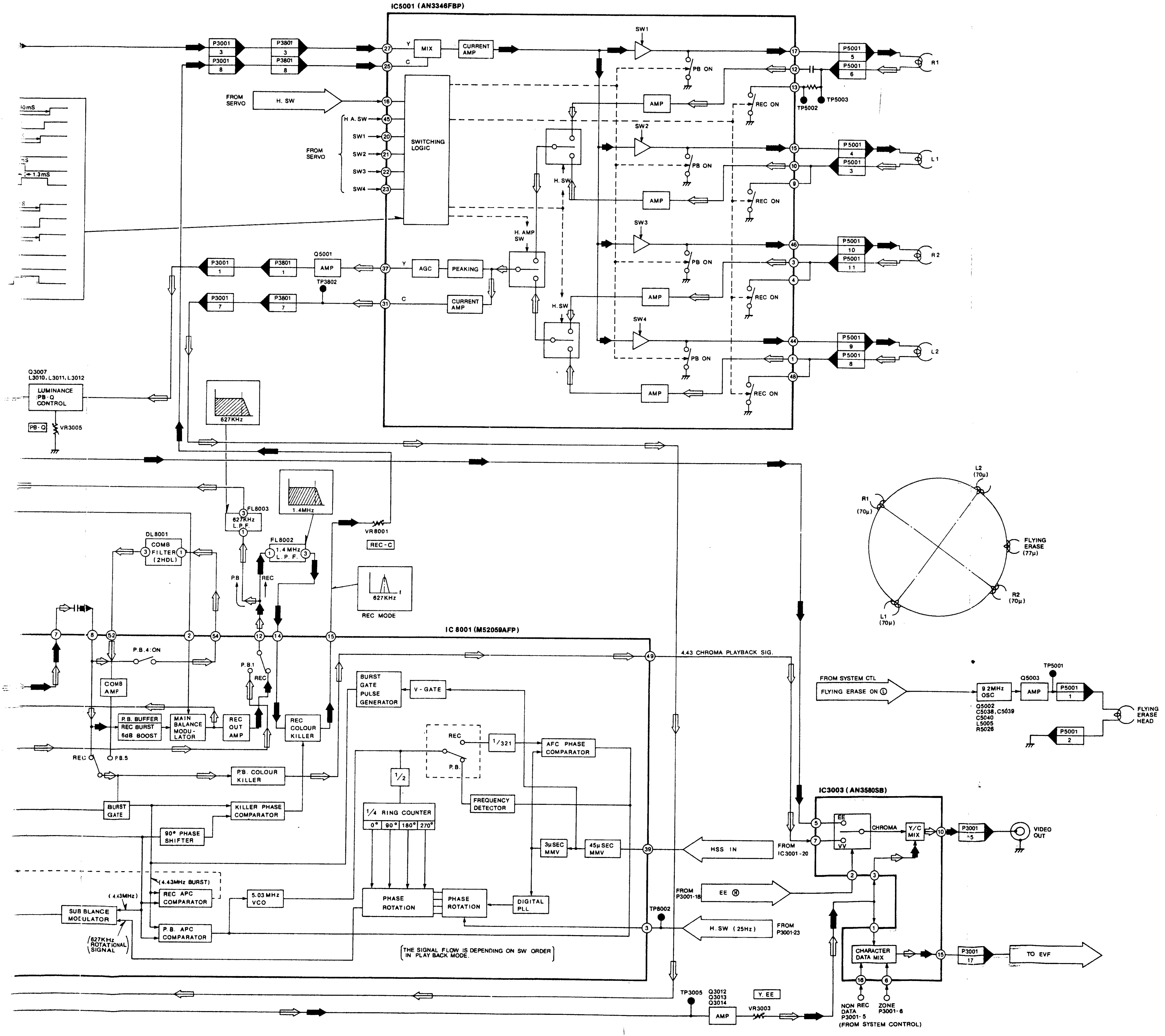
MAIN SIGNAL PATH IN REC MODE.

MAIN SIGNAL PATH IN PLAYBACK MODE.

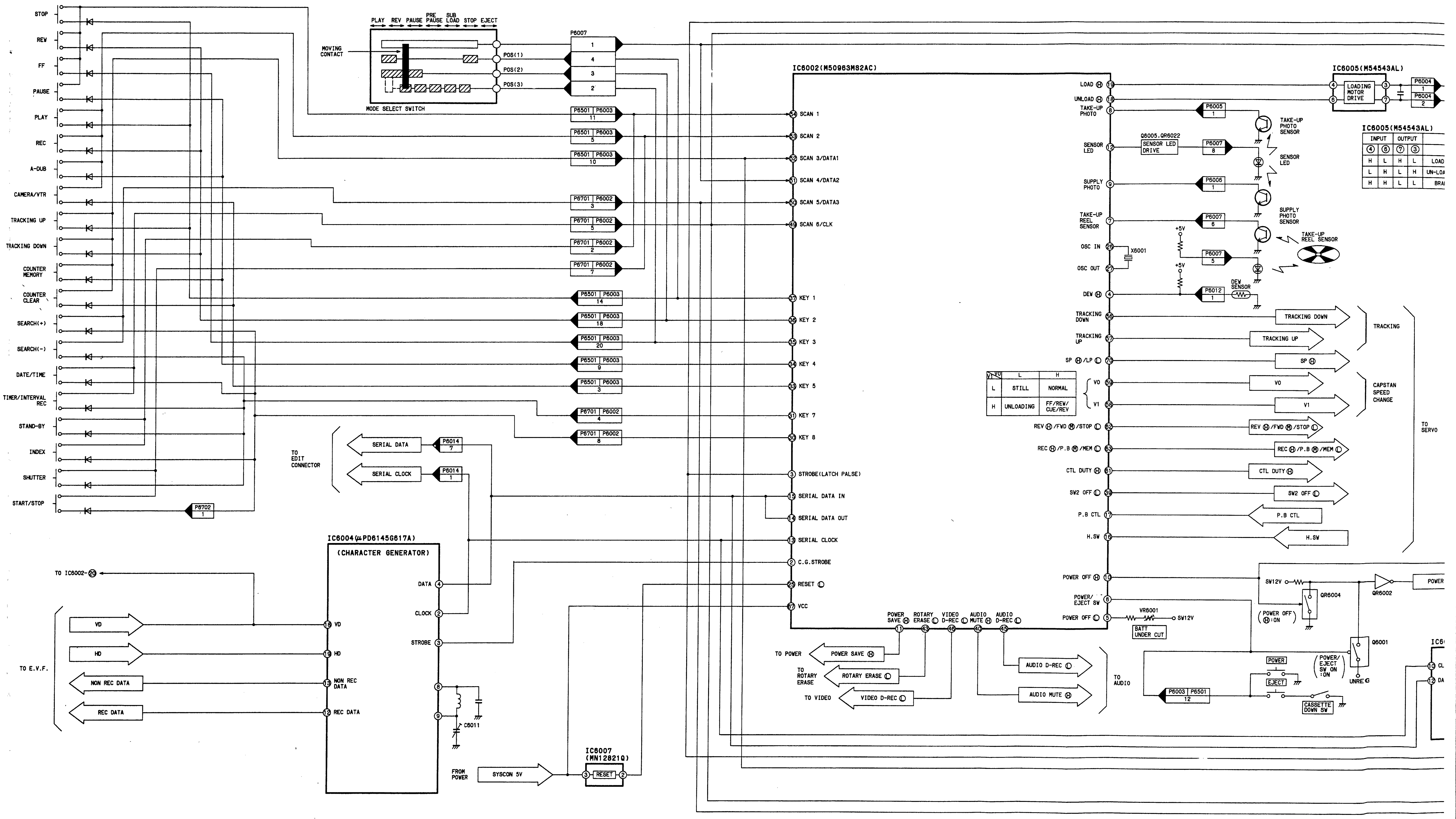

FROM CAMERA PROCESS
P3001 10
CAMERA Y
FROM SYSTEM CTL (IC6502- 58)
P3001 20
C.R H
IC 3001 (VEFH08D)
AGC
EE
VV
CLAMP
P.B. AMP
AGC DET
SYNC SEPA
CLAMP
LUMINANCE SIGNAL
dB
3MHz
f
FL3001
3MHz L.P.F.
REC
AMP
DETAIL L.N.C.
P.B.
V.V. AMP
DROP - OUT COMPENSATOR
Q3001
AMP
CLAMP
LIM
L.P.F.
N.C. MIX
NL EMPHASIS
dB
5
0
- 20 dB
- 10 dB
- 0 dB
0.1 0.5 1 2 3 4 5
MHz
NON - LINEAR EMPHASIS/ DE - EMPHASIS
MAIN EMPHASIS
dB 12
0
100k 500k 2M
Hz
EMPHASIS
SYNC T./ DEV.
FM MODULATOR
WHITE / DARK CLIP
MHz 4.8
3.8
SYNC TIP
WHITE LEVEL
FM MODURATION
(dB)
3.8
4.8
(MHz)
Y REC CURR.
VR3002
TP3006
Q3010
Q3015
REC AMP
(dB)
1
5
(MHz)
FL3002
L.P.F.
C3008
L3003
TRAP
Q3002
AMP
DROP OUT DETECTOR
D.O.C. PULSE
AMP
L.P.F.
FM DEMODULATOR
LIMITER
LIMITER
H.P.F.
Q3008
AMP
PICTURE CONTROL
PB 5V
PB Y
L3005
C3012
R3019
VR3001
L.N.C ADJ.
FL3003
L.P.F.
IC 3004 (TL8809F)
1H DELAY
IC 3002 (MST001MS)
FROM SERVO (IC2001- 24)
P3001 24
4.43MHz CLOCK
FREQ. DIVIDER
FROM CAMERA PROCESS
P3001 12
CAMERA C
REC MODE SWITCHING
HEAD AMP SW
HEAD SW
SW1
SW2
SW3
SW4
40mS
20mS
0.63mS
60mS
21.3mS
1.3mS
P.B. MODE SWITCHING
HEAD AMP SW
HEAD SW
SW1
SW2
SW3
SW4
40mS
20mS
60mS
Q3007
L3010, L3011, L3012
LUMINANCE PB-Q CONTROL
PB-Q
VR3005
IC5001 (AN3346FBP)
P3001 3
P3001 8
P3801 3
P3801 8
Y
C
MIX
CURRENT AMP
FROM SERVO
H. SW
H A. SW
SW1
SW2
SW3
SW4
FROM SERVO
SWITCHING LOGIC
H. AMP SW
H. SW
H. SW
P3001 1
P3801 1
Q5001
AMP
TP3802
P3001 7
P3801 7
AGC
PEAKING
CURRENT AMP
627KHz
FL8003
627KHz L.P.F.
1.4MHz
FL8002
1.4 MHz L.P.F.
VR8001
REC-C
627KHz
REC MODE
P.B
REC
DL8001
COMB FILTER (2HDL)
IC 8001 (M52059AFP)
P.B.2 : ON
P.B.3
P.B.4 : ON
P.B.1
REC
Q3005
AMP
ACC
COMB AMP
P.B. BUFFER
REC BURST 6dB BOOST
MAIN BALANCE MODU-LATOR
REC OUT AMP
REC COLOUR KILLER
BURST GATE PULSE GENERATOR
V - GATE
REC
P.B.5
P.B. COLOUR KILLER
ACC DETECTOR
BURST GATE
KILLER PHASE COMPARATOR
90° PHASE SHIFTER
X TAL VCO
(4.43MHz BURST)
(4.43MHz)
REC APC COMPARATOR
P.B. APC COMPARATOR
5.03MHz VCO
SUB BLANCE MODULATOR
(627KHz ROTATIONAL SIGNAL)
REC
P.B.
1/2
1/321
1/4 RING COUNTER
0° 90° 180° 270°
FREQUENCY DETECTOR
AFC P COMPA
3μSEC MMV
PHASE ROTATION
PHASE ROTATION
DIGITAL PLL
[THE SIGNAL FLOW IS DEPENDING ON SW ORDER IN PLAY BACK MODE.]
QR8006
BUFFER
BUFFER
REC
(P.B:ON)
QR8007
(P.B:OFF)
QR8005
P.B
4.43MHz
FL8008
4.43MHz B.P.F.
P3001 4
PB 5V
5.06MHz
FL8001
5.06MHz B.P.F.
TP8004
TP8003
X8001
OSC 4.43MHz
0.5Vp-p 4.43MHz

Back Page:
CAMERA STAGE Section

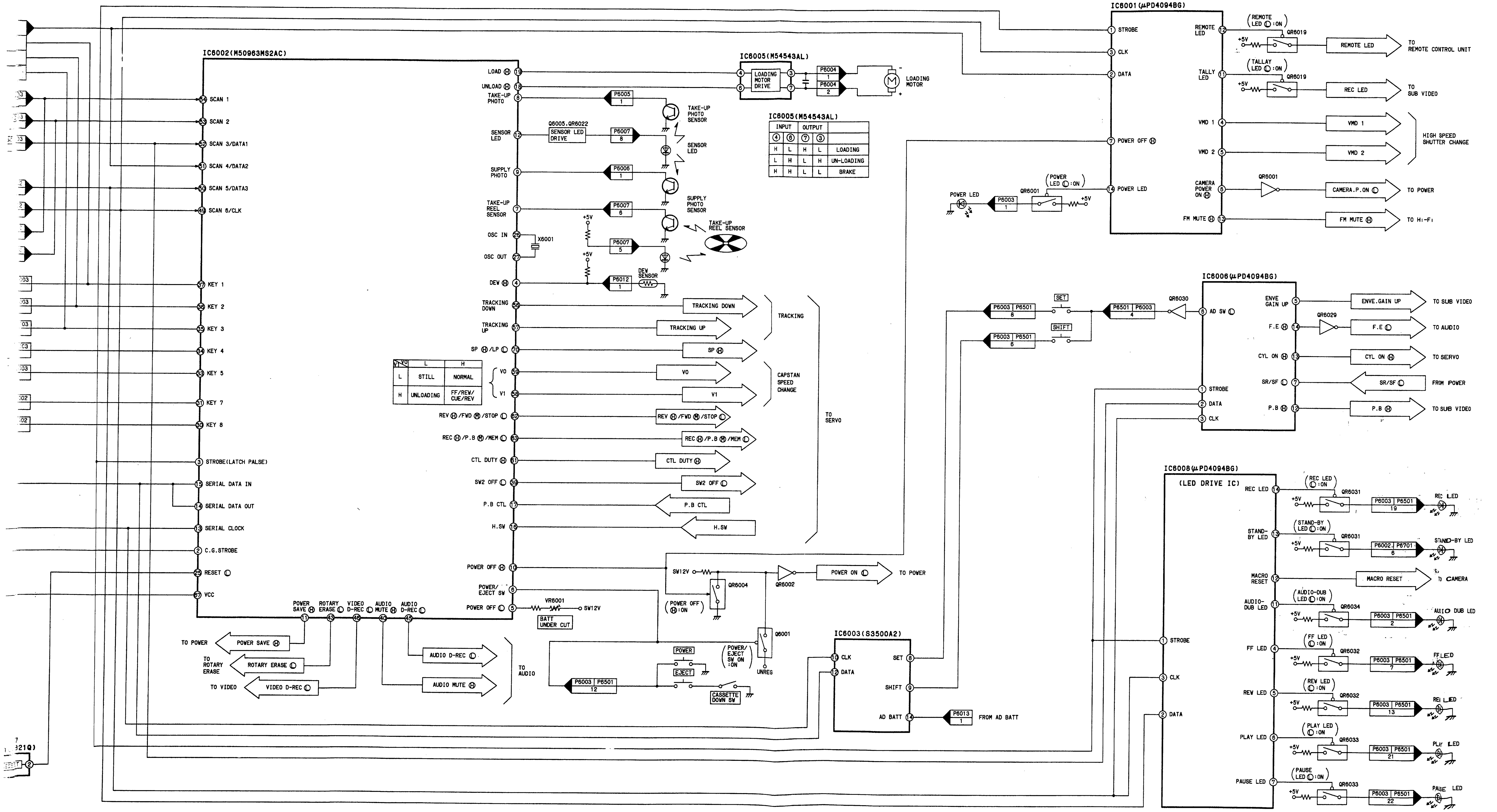
MODE. ⇐ MAIN SIGNAL PATH IN PLAYBACK MODE.


IC5001 (AN3346FBP)
P3001 3
P3001 8
P3801 3
P3801 8
Y
C
MIX
CURRENT AMP
SW1
SW2
SW3
SW4
PB ON
REC ON
AMP
P5001 5
P5001 6
P5001 4
P5001 3
P5001 10
P5001 11
P5001 9
P5001 8
R1
L1
R2
L2
TP5002
TP5003
FROM SERVO
H. SW
H A. SW
SWITCHING LOGIC
H. AMP SW
P3001 1
P3001 7
P3801 1
P3801 7
Q5001
AMP
TP3802
AGC
PEAKING
Q3007
L3010, L3011, L3012
LUMINANCE PB-Q CONTROL
PB-Q
VR3005
627KHz
1.4MHz
FL8003
627KHz L.P.F.
FL8002
1.4 MHz L. P. F.
VR8001
REC-C
DL8001
COMB FILTER (2HDL)
P.B
REC
REC MODE
IC 8001 (M52059AFP)
P.B.4 ON
COMB AMP
P.B. BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODU-LATOR
REC OUT AMP
REC COLOUR KILLER
BURST GATE PULSE GENERATOR
V - GATE
1/321
AFC PHASE COMPARATOR
1/2
FREQUENCY DETECTOR
P.B. COLOUR KILLER
BURST GATE
KILLER PHASE COMPARATOR
90° PHASE SHIFTER
1/4 RING COUNTER
0° 90° 180° 270°
3μSEC MMV
45μSEC MMV
(4.43MHz BURST)
REC APC COMPARATOR
5.03MHz VCO
PHASE ROTATION
DIGITAL PLL
(4.43MHz)
SUB BLANCE MODULATOR
P.B. APC COMPARATOR
(627KHz ROTATIONAL SIGNAL)
(THE SIGNAL FLOW IS DEPENDING ON SW ORDER IN PLAY BACK MODE.)
4.43 CHROMA PLAYBACK SIG.
HSS IN
FROM IC3001-20
EE Ⓗ
FROM P3001-18
H.SW (25Hz)
FROM P3001-23
TP8002
TP3005
Q3012
Q3013
Q3014
AMP
Y.EE
VR3003
L2 (70μ)
R1 (70μ)
FLYING ERASE (77μ)
R2 (70μ)
L1 (70μ)
FROM SYSTEM CTL
FLYING ERASE ON Ⓛ
9.2MHz OSC
Q5003
AMP
TP5001
P5001 1
P5001 2
Q5002
C5038, C5039
C5040
L5005
R5026
FLYING ERASE HEAD
IC3003 (AN3580SB)
EE
VV
CHROMA
Y/C MIX
P3001 5
VIDEO OUT
CHARACTER DATA MIX
P3001 17
TO EVF
NON REC DATA P3001-5
ZONE P3001-6
(FROM SYSTEM CONTROL)

3-3. SYSTEM CONTROL BLOCK DIAGRAM



STOP
REW
FF
PAUSE
PLAY
REC
A-DUB
CAMERA/VTR
TRACKING UP
TRACKING DOWN
COUNTER MEMORY
COUNTER CLEAR
SEARCH(+)
SEARCH(-)
DATE/TIME
TIMER/INTERVAL REC
STAND-BY
INDEX
SHUTTER
START/STOP
P6702 1
PLAY REV PAUSE PRE PAUSE SUB LOAD STOP EJECT
MOVING CONTACT
MODE SELECT SWITCH
POS(1)
POS(2)
POS(3)
P6007
P6501 P6003
P6701 P6002
IC6002(M50963M82AC)
SCAN 1
SCAN 2
SCAN 3/DATA1
SCAN 4/DATA2
SCAN 5/DATA3
SCAN 6/CLK
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
KEY 7
KEY 8
STROBE(LATCH PALSE)
SERIAL DATA IN
SERIAL DATA OUT
SERIAL CLOCK
C.G.STROBE
RESET Ⓛ
VCC
TO EDIT CONNECTOR
SERIAL DATA
SERIAL CLOCK
P6014
IC6004(μPD6145G617A)
(CHARACTER GENERATOR)
DATA
CLOCK
STROBE
VD
HD
NON REC DATA
REC DATA
C6011
TO IC6002-⑳
TO E.V.F.
FROM POWER
SYSCON 5V
IC6007 (MN12821Q)
RESET
LOAD Ⓗ
UNLOAD Ⓗ
TAKE-UP PHOTO
SENSOR LED
SUPPLY PHOTO
TAKE-UP REEL SENSOR
OSC IN
OSC OUT
X6001
DEW Ⓗ
TRACKING DOWN
TRACKING UP
SP Ⓗ/LP Ⓛ
V0
V1
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
REC Ⓗ/P.B Ⓜ/MEM Ⓛ
CTL DUTY Ⓗ
SW2 OFF Ⓛ
P.B CTL
H.SW
POWER OFF Ⓗ
POWER/EJECT SW
POWER OFF Ⓛ
POWER SAVE Ⓗ
ROTARY ERASE Ⓛ
VIDEO D-REC Ⓛ
AUDIO MUTE Ⓗ
AUDIO D-REC Ⓛ
TO POWER
TO ROTARY ERASE
TO VIDEO
TO AUDIO
VR6001
BATT UNDER CUT
SW12V
P6005
P6006
P6012
Q6005,QR6022
SENSOR LED DRIVE
TAKE-UP PHOTO SENSOR
SENSOR LED
SUPPLY PHOTO SENSOR
TAKE-UP REEL SENSOR
DEW SENSOR
+5V
TRACKING
CAPSTAN SPEED CHANGE
TO SERVO
V1 \ V0 | L | H
L | STILL | NORMAL
H | UNLOADING | FF/REW/CUE/REV
IC6005(M54543AL)
LOADING MOTOR DRIVE
P6004
INPUT | OUTPUT
④ ⑥ | ⑦ ③
H L | H L | LOAD
L H | L H | UN-LOA
H H | L L | BRA
QR6004
QR6002
Q6001
(POWER OFF Ⓗ:ON)
POWER
EJECT
CASSETTE DOWN SW
(POWER/EJECT SW ON :ON)
UNREG
P6003 P6501 12
IC6
CL
DA


IC6002(M50963MS2AC)
SCAN 1
SCAN 2
SCAN 3/DATA1
SCAN 4/DATA2
SCAN 5/DATA3
SCAN 6/CLK
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
KEY 7
KEY 8
STROBE(LATCH PALSE)
SERIAL DATA IN
SERIAL DATA OUT
SERIAL CLOCK
C.G.STROBE
RESET Ⓛ
VCC
POWER SAVE Ⓗ
ROTARY ERASE Ⓛ
VIDEO D-REC Ⓛ
AUDIO MUTE Ⓗ
AUDIO D-REC Ⓛ
LOAD Ⓗ
UNLOAD Ⓗ
TAKE-UP PHOTO
SENSOR LED
SUPPLY PHOTO
TAKE-UP REEL SENSOR
OSC IN
OSC OUT
DEW Ⓗ
TRACKING DOWN
TRACKING UP
SP Ⓗ/LP Ⓛ
V0
V1
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
REC Ⓗ/P.B Ⓜ/MEM Ⓛ
CTL DUTY Ⓗ
SW2 OFF Ⓛ
P.B CTL
H.SW
POWER OFF Ⓗ
POWER/ EJECT SW
POWER OFF Ⓛ
Q6005,QR6022
SENSOR LED DRIVE
P6005 1
P6007 8
P6006 1
P6007 6
P6007 5
P6012 1
TAKE-UP PHOTO SENSOR
SENSOR LED
SUPPLY PHOTO SENSOR
TAKE-UP REEL SENSOR
X6001
+5V
DEW SENSOR
TRACKING DOWN
TRACKING UP
TRACKING
SP Ⓗ
V0
V1
CAPSTAN SPEED CHANGE
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
REC Ⓗ/P.B Ⓜ/MEM Ⓛ
CTL DUTY Ⓗ
SW2 OFF Ⓛ
P.B CTL
H.SW
TO SERVO
TO POWER
POWER SAVE Ⓗ
TO ROTARY ERASE
ROTARY ERASE Ⓛ
TO VIDEO
VIDEO D-REC Ⓛ
AUDIO D-REC Ⓛ
AUDIO MUTE Ⓗ
TO AUDIO
VR6001
SW12V
BATT UNDER CUT
SW12V
QR6004
QR6002
POWER ON Ⓛ
TO POWER
(POWER OFF Ⓗ:ON)
Q6001
UNREG
POWER
EJECT
(POWER/ EJECT SW ON :ON)
CASSETTE DOWN SW
P6003 P6501 12
IC6005(M54543AL)
LOADING MOTOR DRIVE
P6004 1
P6004 2
LOADING MOTOR
IC6003(S3500A2)
CLK
DATA
SET
SHIFT
AD BATT
P6013 1
FROM AD BATT
POWER LED
P6003 1
QR6001
(POWER LED Ⓛ:ON)
IC6001(μPD4094BG)
STROBE
CLK
DATA
POWER OFF Ⓗ
POWER LED
REMOTE LED
TALLY LED
VMD 1
VMD 2
CAMERA POWER ON Ⓗ
FM MUTE Ⓗ
(REMOTE LED Ⓛ:ON)
QR6019
(TALLAY LED Ⓛ:ON)
QR6019
REMOTE LED
TO REMOTE CONTROL UNIT
REC LED
TO SUB VIDEO
VMD 1
VMD 2
HIGH SPEED SHUTTER CHANGE
QR6001
CAMERA.P.ON Ⓛ
TO POWER
FM MUTE Ⓗ
TO Hi-Fi
IC6006(μPD4094BG)
SET
SHIFT
P6003 P6501 8
P6003 P6501 6
P6501 P6003 4
QR6030
AD SW Ⓛ
STROBE
DATA
CLK
ENVE GAIN UP
F.E Ⓗ
CYL ON Ⓗ
SR/SF Ⓛ
P.B Ⓗ
QR6029
ENVE.GAIN UP
TO SUB VIDEO
F.E Ⓛ
TO AUDIO
CYL ON Ⓗ
TO SERVO
SR/SF Ⓛ
FROM POWER
P.B Ⓗ
TO SUB VIDEO
IC6008(μPD4094BG)
(LED DRIVE IC)
STROBE
CLK
DATA
REC LED
STAND-BY LED
MACRO RESET
AUDIO-DUB LED
FF LED
REW LED
PLAY LED
PAUSE LED
(REC LED Ⓛ:ON)
QR6031
P6003 P6501 19
REC LED
(STAND-BY LED Ⓛ:ON)
QR6031
P6002 P6701 6
STAND-BY LED
MACRO RESET
TO CAMERA
(AUDIO-DUB LED Ⓛ:ON)
QR6034
P6003 P6501 2
AUDIO DUB LED
(FF LED Ⓛ:ON)
QR6032
P6003 P6501 7
FF LED
(REW LED Ⓛ:ON)
QR6032
P6003 P6501 13
REW LED
(PLAY LED Ⓛ:ON)
QR6033
P6003 P6501 21
PLAY LED
(PAUSE LED Ⓛ:ON)
QR6033
P6003 P6501 22
PAUSE LED
3210)

IC6005(M54543AL)

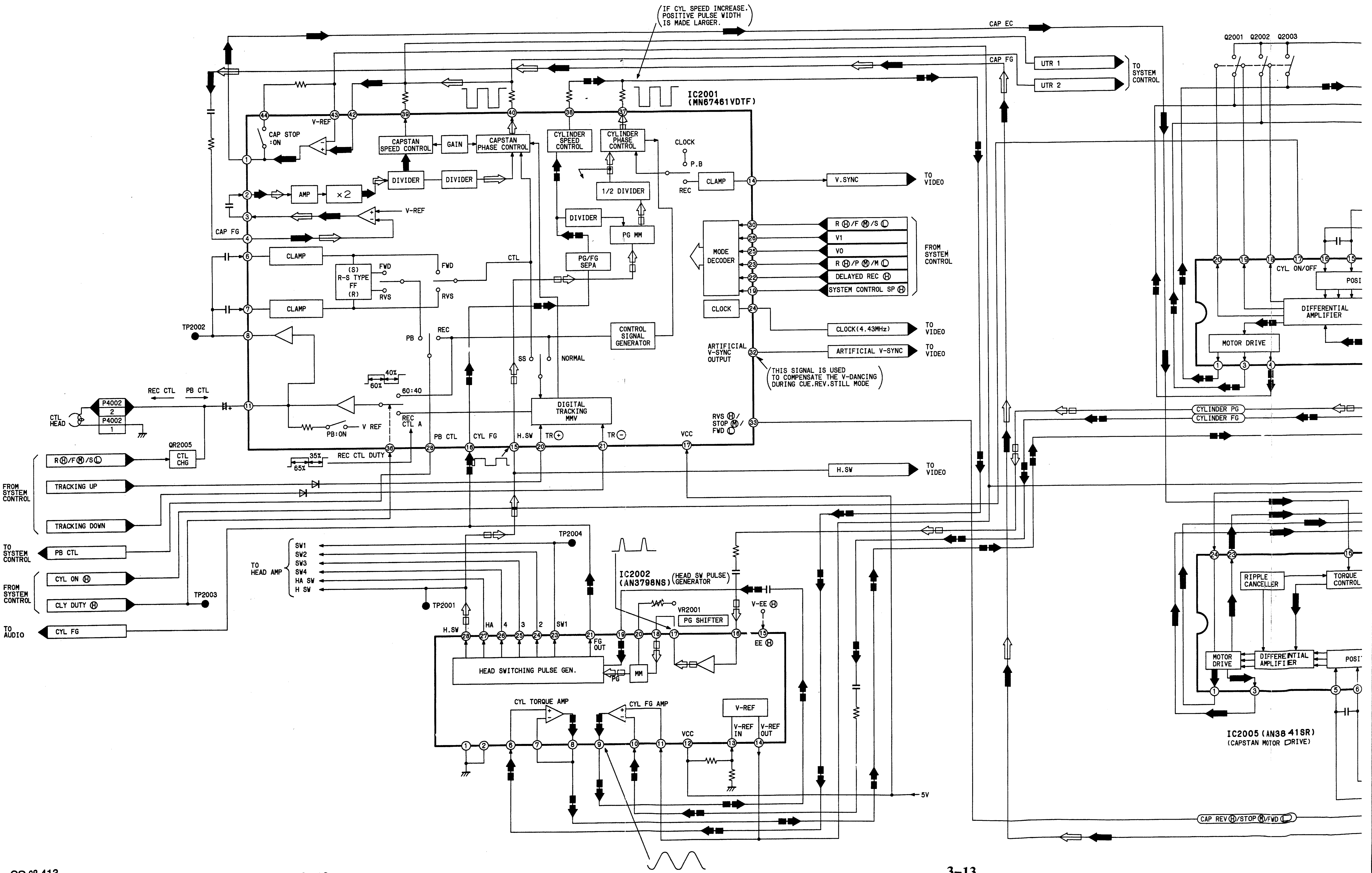
INPUT		OUTPUT		
④	⑥	⑦	③	
H	L	H	L	LOADING
L	H	L	H	UN-LOADING
H	H	L	L	BRAKE

V1 \ V0	L	H
L	STILL	NORMAL
H	UNLOADING	FF/REW/ CUE/REV

Next Page:
SERVO Section

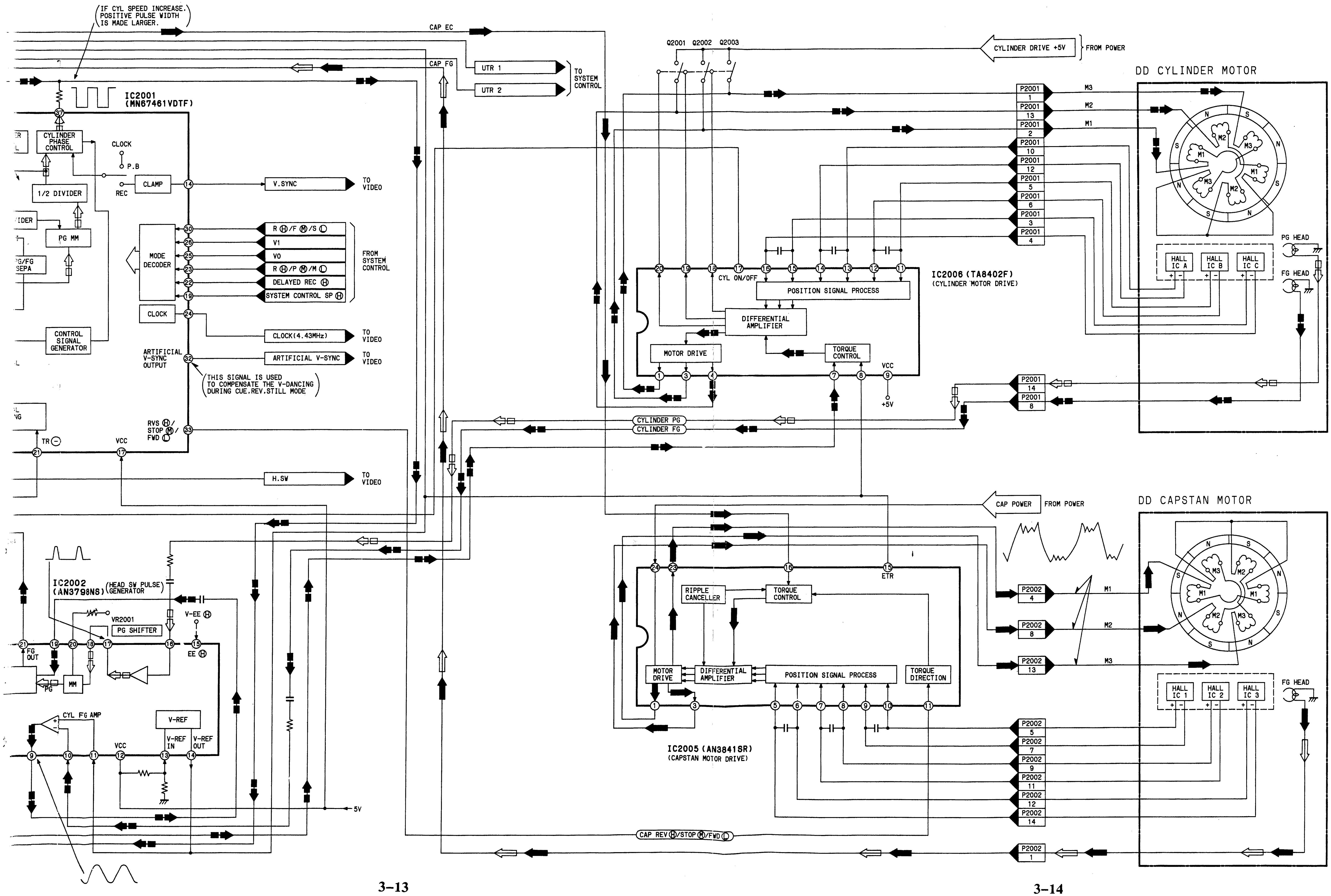
3-4. SERVO BLOCK DIAGRAM

CAPSTAN SERVO SPEED LOOP.
CAPSTAN SERVO PHASE LOOP.
CYLINDER SERVO SPEED LOOP.
CYLINDER SERVO PHASE LOOP.

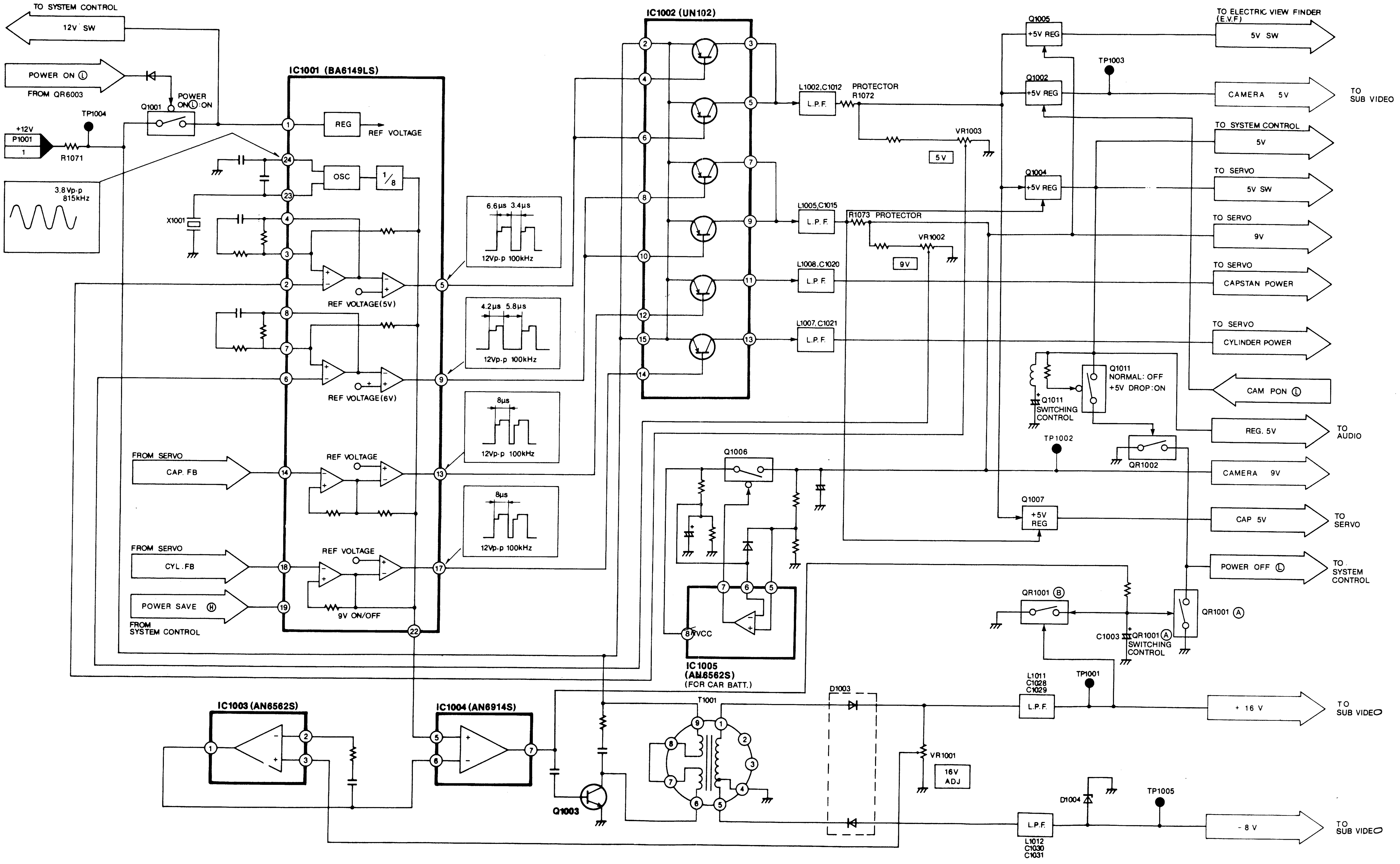


IF CYL SPEED INCREASE. POSITIVE PULSE WIDTH IS MADE LARGER.
CAP EC
CAP FG
UTR 1
UTR 2
TO SYSTEM CONTROL
Q2001
Q2002
Q2003
IC2001 (MN67461VDTF)
CAP STOP :ON
V-REF
CAPSTAN SPEED CONTROL
GAIN
CAPSTAN PHASE CONTROL
CYLINDER SPEED CONTROL
CYLINDER PHASE CONTROL
CLOCK
P.B
REC
CLAMP
V.SYNC
TO VIDEO
DIVIDER
DIVIDER
1/2 DIVIDER
AMP
×2
CAP FG
PG MM
PG/FG SEPA
CLAMP
CLAMP
(S) R-S TYPE FF (R)
FWD
RVS
CTL
MODE DECODER
R Ⓗ/F Ⓜ/S Ⓛ
V1
V0
R Ⓗ/P Ⓜ/M Ⓛ
DELAYED REC Ⓗ
SYSTEM CONTROL SP Ⓗ
FROM SYSTEM CONTROL
CLOCK
CLOCK(4.43MHz)
TO VIDEO
ARTIFICIAL V-SYNC OUTPUT
ARTIFICIAL V-SYNC
TO VIDEO
THIS SIGNAL IS USED TO COMPENSATE THE V-DANCING DURING CUE.REV.STILL MODE
TP2002
PB
REC
CONTROL SIGNAL GENERATOR
SS
NORMAL
40%
60%
60:40
REC CTL A
DIGITAL TRACKING MMV
REC CTL
PB CTL
P4002 2
P4002 1
CTL HEAD
V REF
PB:ON
RVS Ⓗ/ STOP Ⓜ/ FWD Ⓛ
PB CTL
CYL FG
H.SW
TR⊕
TR⊖
VCC
QR2005
CTL CHG
35%
65%
REC CTL DUTY
H.SW
TO VIDEO
FROM SYSTEM CONTROL
R Ⓗ/F Ⓜ/S Ⓛ
TRACKING UP
TRACKING DOWN
TO SYSTEM CONTROL
PB CTL
FROM SYSTEM CONTROL
CYL ON Ⓗ
CLY DUTY Ⓗ
TP2003
TO AUDIO
CYL FG
TO HEAD AMP
SW1
SW2
SW3
SW4
HA SW
H SW
TP2004
TP2001
IC2002 (AN3798NS)
(HEAD SW PULSE GENERATOR)
VR2001
PG SHIFTER
V-EE Ⓗ
EE Ⓗ
H.SW
HA
4
3
2
SW1
FG OUT
HEAD SWITCHING PULSE GEN.
PG
MM
CYL TORQUE AMP
CYL FG AMP
V-REF
VCC
V-REF IN
V-REF OUT
5V
CYLINDER PG
CYLINDER FG
CYL ON/OFF
POSI
DIFFERENTIAL AMPLIFIER
MOTOR DRIVE
RIPPLE CANCELLER
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
POSI
IC2005 (AN3841SR) (CAPSTAN MOTOR DRIVE)
CAP REV Ⓗ/STOP Ⓜ/FWD Ⓛ

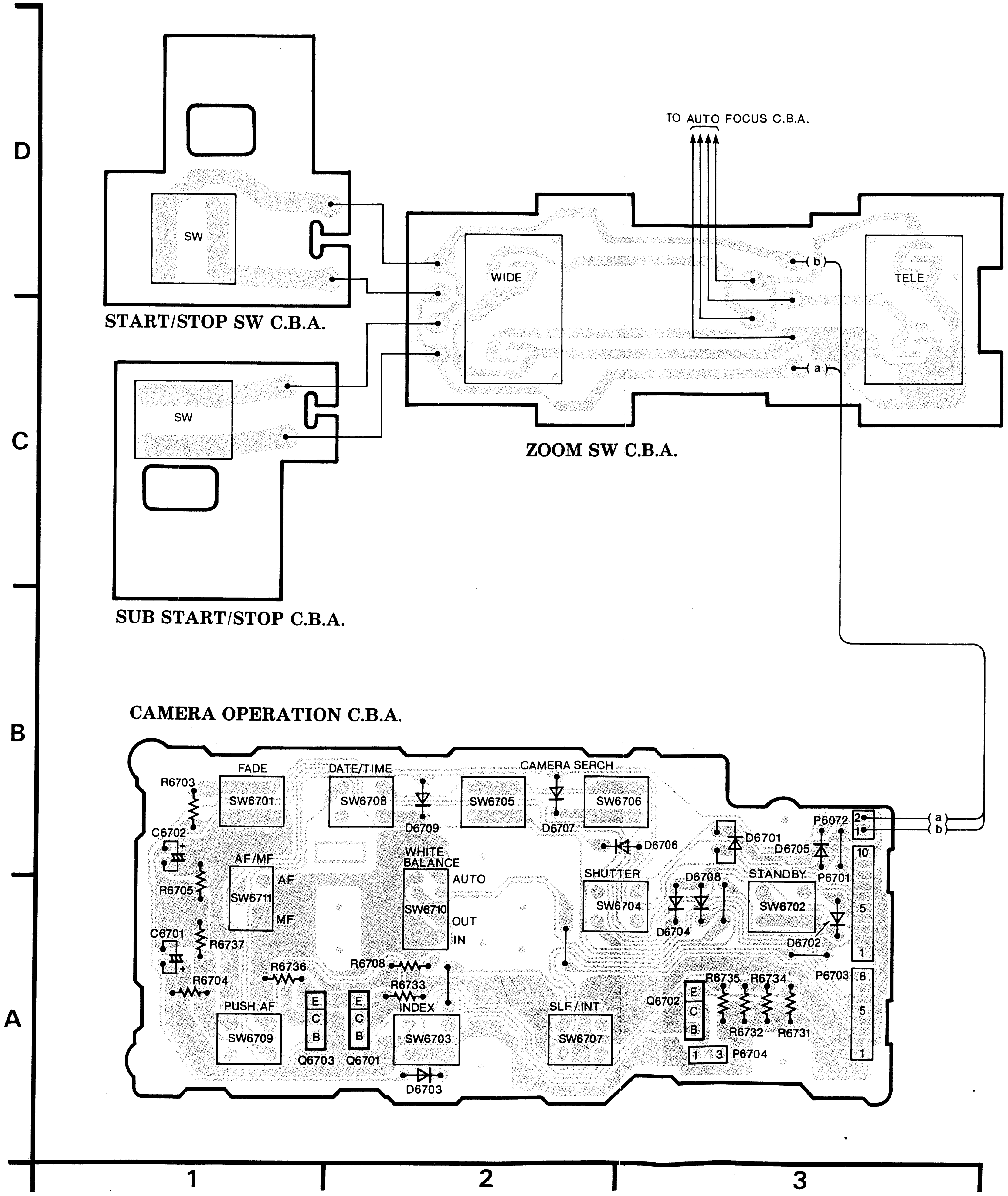
⬅ CAPSTAN SERVO SPEED LOOP. ⬅ CYLINDER SERVO SPEED LOOP.
⇦ CAPSTAN SERVO PHASE LOOP. ⇦ CYLINDER SERVO PHASE LOOP.


IF CYL SPEED INCREASE. POSITIVE PULSE WIDTH IS MADE LARGER.
CAP EC
CAP FG
UTR 1
UTR 2
TO SYSTEM CONTROL
IC2001 (MN67461VDTF)
CYLINDER PHASE CONTROL
CLOCK
P.B
REC
CLAMP
1/2 DIVIDER
PG MM
G/FG SEPA
V.SYNC
TO VIDEO
MODE DECODER
R Ⓗ/F Ⓜ/S Ⓛ
V1
VO
R Ⓗ/P Ⓜ/M Ⓛ
DELAYED REC Ⓗ
SYSTEM CONTROL SP Ⓗ
FROM SYSTEM CONTROL
CLOCK
CLOCK(4.43MHz)
TO VIDEO
CONTROL SIGNAL GENERATOR
ARTIFICIAL V-SYNC OUTPUT
ARTIFICIAL V-SYNC
TO VIDEO
THIS SIGNAL IS USED TO COMPENSATE THE V-DANCING DURING CUE.REV.STILL MODE
RVS Ⓗ/ STOP Ⓜ/ FWD Ⓛ
TR㊀
VCC
H.SW
TO VIDEO
IC2002 (AN3798NS)
(HEAD SW PULSE) GENERATOR
VR2001
PG SHIFTER
V-EE Ⓗ
EE Ⓗ
FG OUT
PG
MM
CYL FG AMP
V-REF
V-REF IN
V-REF OUT
VCC
-5V
Q2001 Q2002 Q2003
CYLINDER DRIVE +5V
FROM POWER
DD CYLINDER MOTOR
P2001 1
P2001 13
P2001 2
P2001 10
P2001 12
P2001 5
P2001 6
P2001 3
P2001 4
M3
M2
M1
N
S
HALL IC A
HALL IC B
HALL IC C
PG HEAD
FG HEAD
CYL ON/OFF
POSITION SIGNAL PROCESS
DIFFERENTIAL AMPLIFIER
MOTOR DRIVE
TORQUE CONTROL
VCC
+5V
IC2006 (TA8402F)
(CYLINDER MOTOR DRIVE)
P2001 14
P2001 8
CYLINDER PG
CYLINDER FG
CAP POWER
FROM POWER
DD CAPSTAN MOTOR
ETR
RIPPLE CANCELLER
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
POSITION SIGNAL PROCESS
TORQUE DIRECTION
P2002 4
P2002 8
P2002 13
M1
M2
M3
HALL IC 1
HALL IC 2
HALL IC 3
FG HEAD
IC2005 (AN3841SR)
(CAPSTAN MOTOR DRIVE)
P2002 5
P2002 7
P2002 9
P2002 11
P2002 12
P2002 14
P2002 1
CAP REV Ⓗ/STOP Ⓜ/FWD Ⓛ

3-5. POWER SUPPLY BLOCK DIAGRAM


TO SYSTEM CONTROL
12V SW
POWER ON Ⓛ
FROM QR6003
Q1001
POWER ON Ⓛ: ON
TP1004
+12V
P1001
1
R1071
3.8Vp-p
815kHz
IC1001 (BA6149LS)
REG
REF VOLTAGE
OSC
1/8
X1001
REF VOLTAGE(5V)
REF VOLTAGE(6V)
REF VOLTAGE
9V ON/OFF
FROM SERVO
CAP. FB
FROM SERVO
CYL. FB
POWER SAVE Ⓗ
FROM SYSTEM CONTROL
6.6µs 3.4µs
12Vp-p 100kHz
4.2µs 5.8µs
12Vp-p 100kHz
8µs
12Vp-p 100kHz
8µs
12Vp-p 100kHz
IC1002 (UN102)
L1002,C1012
L.P.F.
PROTECTOR
R1072
VR1003
5V
L1005,C1015
L.P.F.
R1073 PROTECTOR
VR1002
9V
L1008,C1020
L.P.F.
L1007,C1021
L.P.F.
Q1006
IC1005
(AN6562S)
(FOR CAR BATT.)
VCC
IC1003 (AN6562S)
IC1004 (AN6914S)
Q1003
T1001
D1003
VR1001
16V ADJ
D1004
TP1005
L1012
C1030
C1031
L.P.F.
L1011
C1028
C1029
L.P.F.
TP1001
Q1005
+5V REG
TO ELECTRIC VIEW FINDER (E.V.F)
5V SW
TP1003
Q1002
+5V REG
CAMERA 5V
TO SUB VIDEO
TO SYSTEM CONTROL
5V
Q1004
+5V REG
TO SERVO
5V SW
TO SERVO
9V
TO SERVO
CAPSTAN POWER
TO SERVO
CYLINDER POWER
Q1011
NORMAL: OFF
+5V DROP: ON
Q1011
SWITCHING CONTROL
CAM PON Ⓛ
TP1002
QR1002
REG. 5V
TO AUDIO
CAMERA 9V
Q1007
+5V REG
CAP 5V
TO SERVO
POWER OFF Ⓛ
TO SYSTEM CONTROL
QR1001 Ⓑ
QR1001 Ⓐ
C1003
QR1001 Ⓐ
SWITCHING CONTROL
+ 16 V
TO SUB VIDEO
- 8 V
TO SUB VIDEO

3-6. CAMERA OPERATION C.B.A.

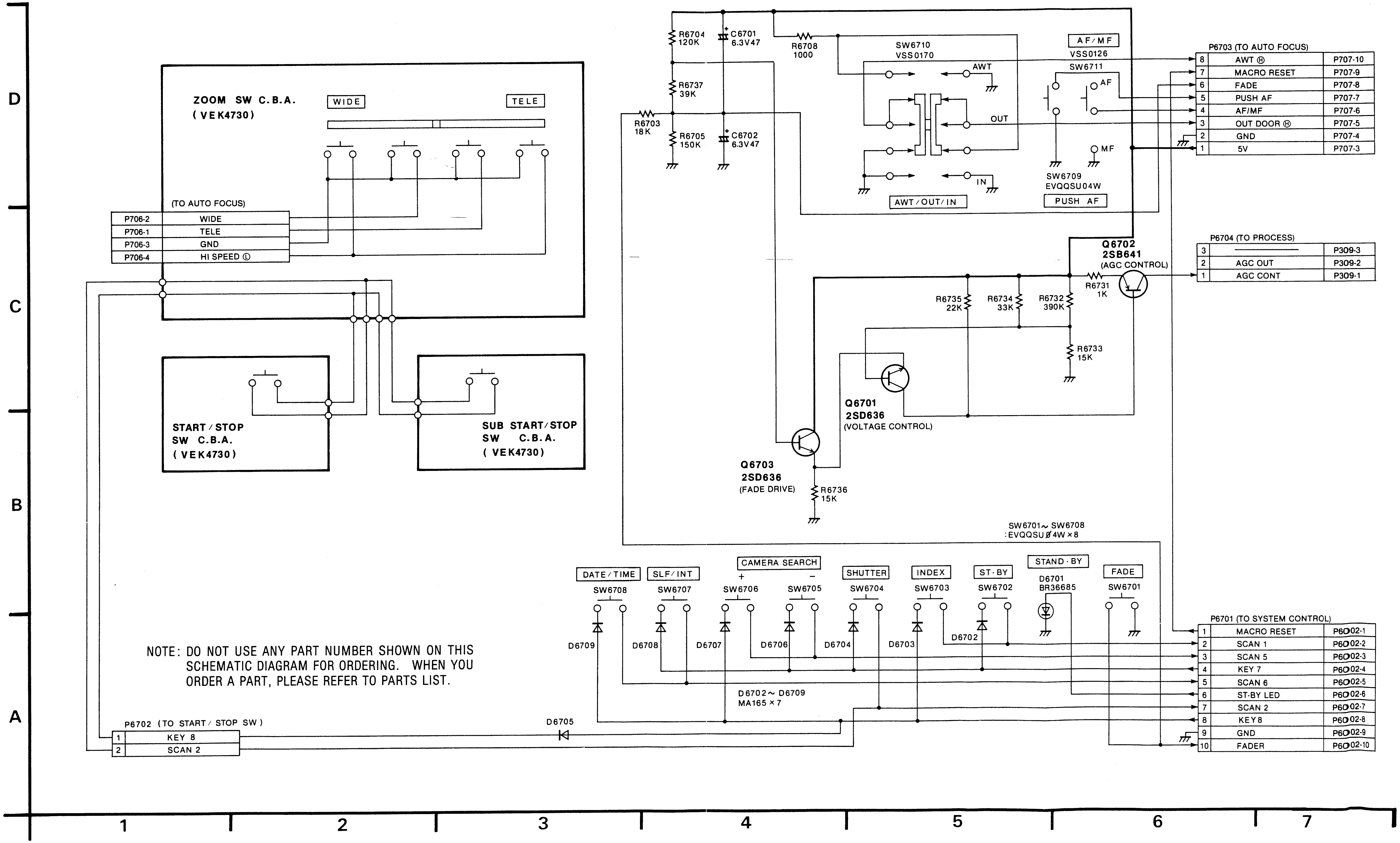

D
C
B
A
1
2
3
SW
START/STOP SW C.B.A.
SW
SUB START/STOP C.B.A.
TO AUTO FOCUS C.B.A.
WIDE
TELE
b
a
ZOOM SW C.B.A.
CAMERA OPERATION C.B.A.
R6703
FADE
SW6701
DATE/TIME
SW6708
D6709
SW6705
CAMERA SERCH
D6707
SW6706
C6702
AF/MF
SW6711
AF
MF
R6705
WHITE BALANCE
AUTO
SW6710
OUT
IN
D6706
SHUTTER
SW6704
D6708
D6704
D6701
D6705
P6072
2
1
a
b
P6701
10
5
1
STANDBY
SW6702
D6702
C6701
R6737
R6736
R6708
R6704
R6733
INDEX
PUSH AF
SW6709
E
C
B
Q6703
Q6701
SW6703
D6703
SLF / INT
SW6707
Q6702
R6735
R6734
R6732
R6731
P6703
8
5
1
1 3
P6704

CAMERA OPERATION C.B.A.	
Transistor	
Q6701 Q6702 Q6703	A-3 A-4 A-2
Connector	
P6701 P6702 P6703 P6704	A-4 B-4 A-4 A-4

ADDRESS INFORMATION

Back Page:
POWER SUPPLY Section

3-7. CAMERA OPERATION SCHEMATIC DIAGRAM


ZOOM SW C.B.A.
(VEK4730)
WIDE
TELE
(TO AUTO FOCUS)
P706-2 WIDE
P706-1 TELE
P706-3 GND
P706-4 HI SPEED Ⓛ
START / STOP SW C.B.A. (VEK4730)
SUB START/STOP SW C.B.A. (VEK4730)
R6704 120K
C6701 6.3V47
R6708 1000
R6737 39K
R6703 18K
R6705 150K
C6702 6.3V47
SW6710 VSS0170
AWT
OUT
IN
AWT / OUT / IN
AF / MF
VSS0126
SW6711
AF
MF
SW6709 EVQQSU04W
PUSH AF
P6703 (TO AUTO FOCUS)
8 AWT Ⓗ P707-10
7 MACRO RESET P707-9
6 FADE P707-8
5 PUSH AF P707-7
4 AF/MF P707-6
3 OUT DOOR Ⓗ P707-5
2 GND P707-4
1 5V P707-3
Q6702 2SB641 (AGC CONTROL)
R6731 1K
P6704 (TO PROCESS)
3 ——— P309-3
2 AGC OUT P309-2
1 AGC CONT P309-1
R6735 22K
R6734 33K
R6732 390K
R6733 15K
Q6701 2SD636 (VOLTAGE CONTROL)
Q6703 2SD636 (FADE DRIVE)
R6736 15K
SW6701～SW6708 :EVQQSU04W×8
DATE / TIME SW6708
SLF / INT SW6707
CAMERA SEARCH + SW6706 − SW6705
SHUTTER SW6704
INDEX SW6703
ST-BY SW6702
STAND-BY D6701 BR36685
FADE SW6701
D6709 D6708 D6707 D6706 D6704 D6703 D6702
D6702～D6709 MA165×7
D6705
P6702 (TO START / STOP SW)
1 KEY 8
2 SCAN 2
P6701 (TO SYSTEM CONTROL)
1 MACRO RESET P6002-1
2 SCAN 1 P6002-2
3 SCAN 5 P6002-3
4 KEY 7 P6002-4
5 SCAN 6 P6002-5
6 ST-BY LED P6002-6
7 SCAN 2 P6002-7
8 KEY 8 P6002-8
9 GND P6002-9
10 FADER P6002-10
D C B A
1 2 3 4 5 6 7

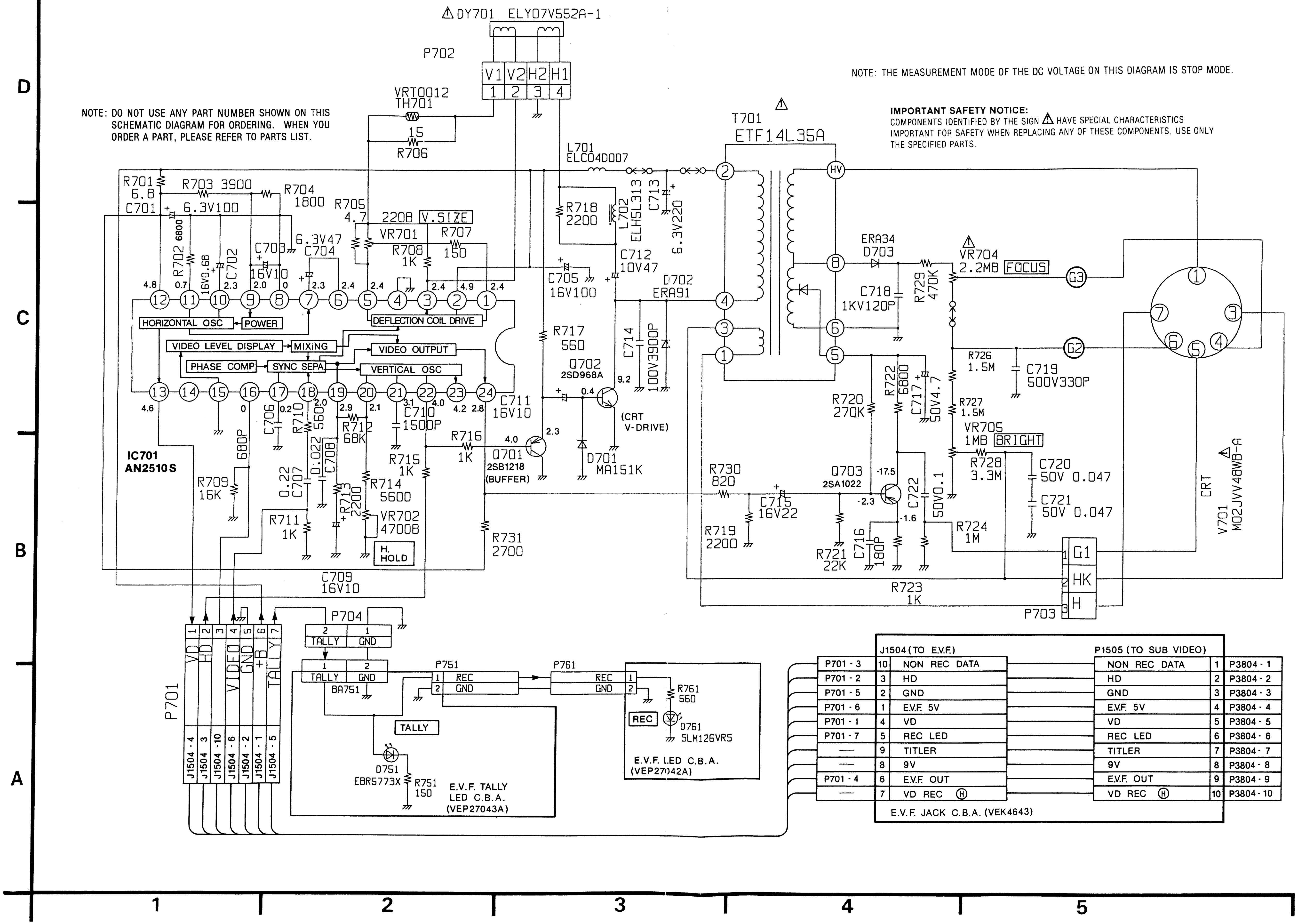
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-8. E.V.F. SCHEMATIC DIAGRAM

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SPECIFIED PARTS.


D
C
B
A
1
2
3
4
5
⚠DY701 ELY07V552A-1
P702
V1 V2 H2 H1
1 2 3 4
VRT0012
TH701
15
R706
R701 6.8
C701 6.3V100
R703 3900
R704 1800
R705 4.7
220B V.SIZE
VR701
R707 150
R708 1K
R702 6800
16V0.68 C702
C703 16V10
6.3V47 C704
HORIZONTAL OSC
POWER
DEFLECTION COIL DRIVE
VIDEO LEVEL DISPLAY
MIXING
VIDEO OUTPUT
PHASE COMP
SYNC SEPA
VERTICAL OSC
IC701
AN2510S
C706 680P
R710 560
C707 0.22
C708 0.022
R712 68K
C710 1500P
R715 1K
R714 5600
R713 2200
VR702 470B
H. HOLD
R709 16K
R711 1K
R716 1K
C711 16V10
Q701 2SB1218 (BUFFER)
R731 2700
C709 16V10
L701 ELC04D007
R718 2200
L702 ELH5L313
C713 6.3V220
C705 16V100
C712 10V47
D702 ERA91
R717 560
Q702 2SD968A
(CRT V-DRIVE)
D701 MA151K
C714 100V3900P
⚠
T701
ETF14L35A
HV
ERA34 D703
C718 1KV120P
R729 470K
⚠ VR704 2.2MB FOCUS
G3
G2
R726 1.5M
C719 500V330P
R727 1.5M
VR705 1MB BRIGHT
R728 3.3M
C720 50V 0.047
C721 50V 0.047
R720 270K
R722 6800
C717 50V4.7
Q703 2SA1022
C722 50V0.1
R724 1M
R730 820
C715 16V22
R719 2200
R721 22K
C716 180P
R723 1K
G1
HK
H
P703
⚠ V701 M02JVV48WB-A CRT
P704
TALLY GND
P701
VD HD VIDEO GND +B TALLY
J1504-4 J1504-3 J1504-10 J1504-6 J1504-2 J1504-1 J1504-5
BA751
TALLY
D751 EBR5773X
R751 150
E.V.F. TALLY LED C.B.A. (VEP27043A)
P751
REC GND
P761
REC
R761 560
D761 SLM126VR5
E.V.F. LED C.B.A. (VEP27042A)

	J1504 (TO E.V.F.)			P1505 (TO SUB VIDEO)	
P701 - 3	10	NON REC DATA	NON REC DATA	1	P3804 - 1
P701 - 2	3	HD	HD	2	P3804 - 2
P701 - 5	2	GND	GND	3	P3804 - 3
P701 - 6	1	E.V.F. 5V	E.V.F. 5V	4	P3804 - 4
P701 - 1	4	VD	VD	5	P3804 - 5
P701 - 7	5	REC LED	REC LED	6	P3804 - 6
—	9	TITLER	TITLER	7	P3804 - 7
—	8	9V	9V	8	P3804 - 8
P701 - 4	6	E.V.F. OUT	E.V.F. OUT	9	P3804 - 9
—	7	VD REC Ⓗ	VD REC Ⓗ	10	P3804 - 10

E.V.F. JACK C.B.A. (VEK4643)

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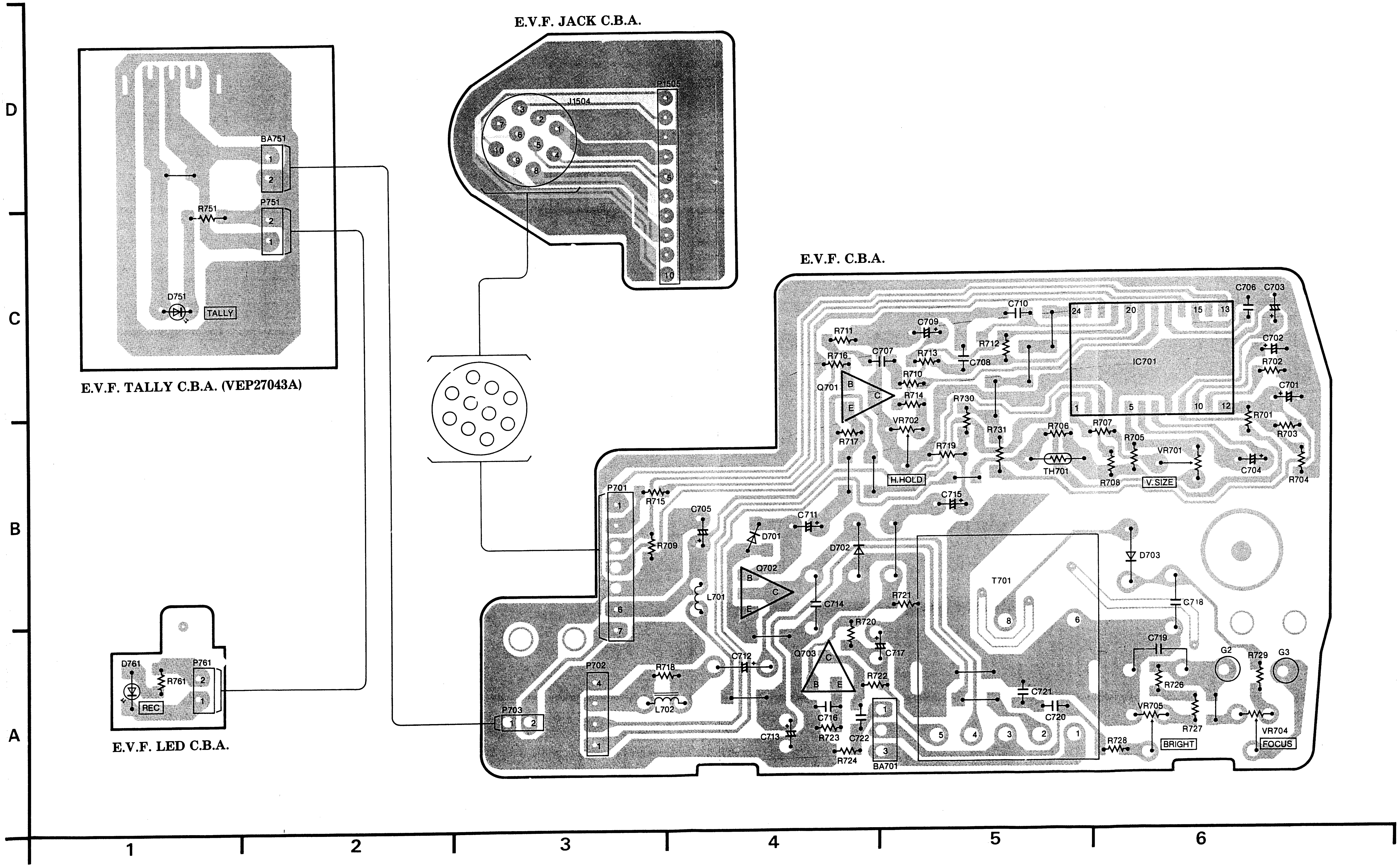
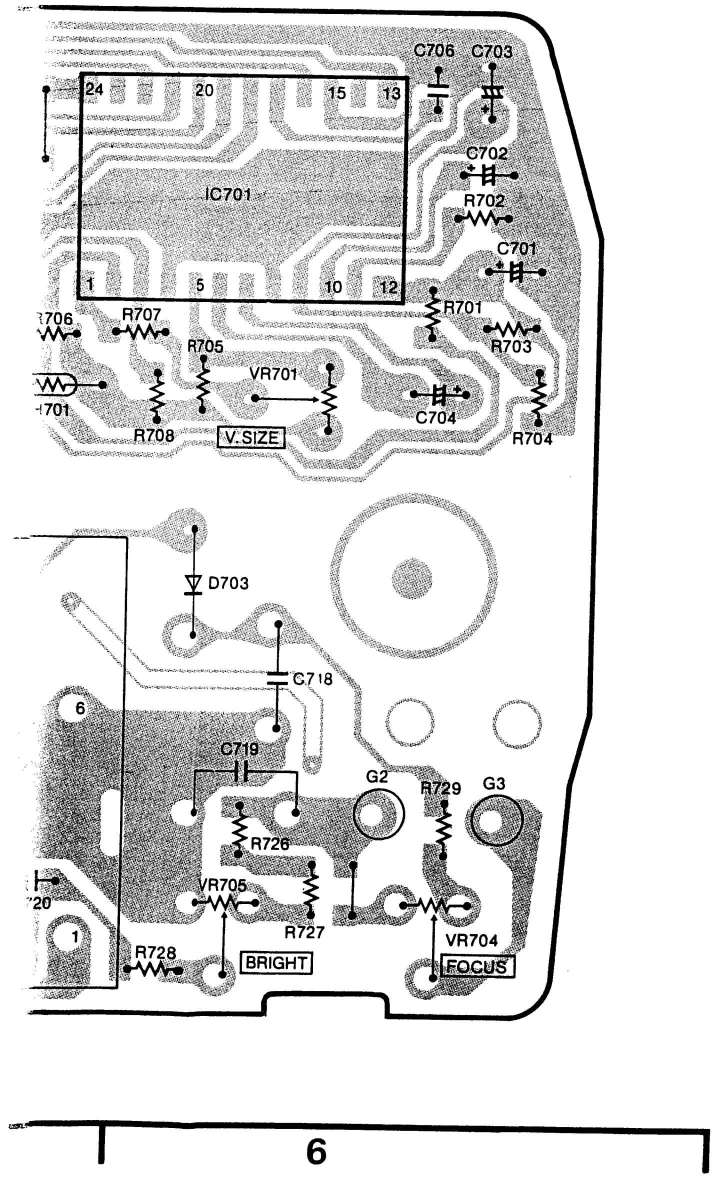
CAMERA OPERATION Section

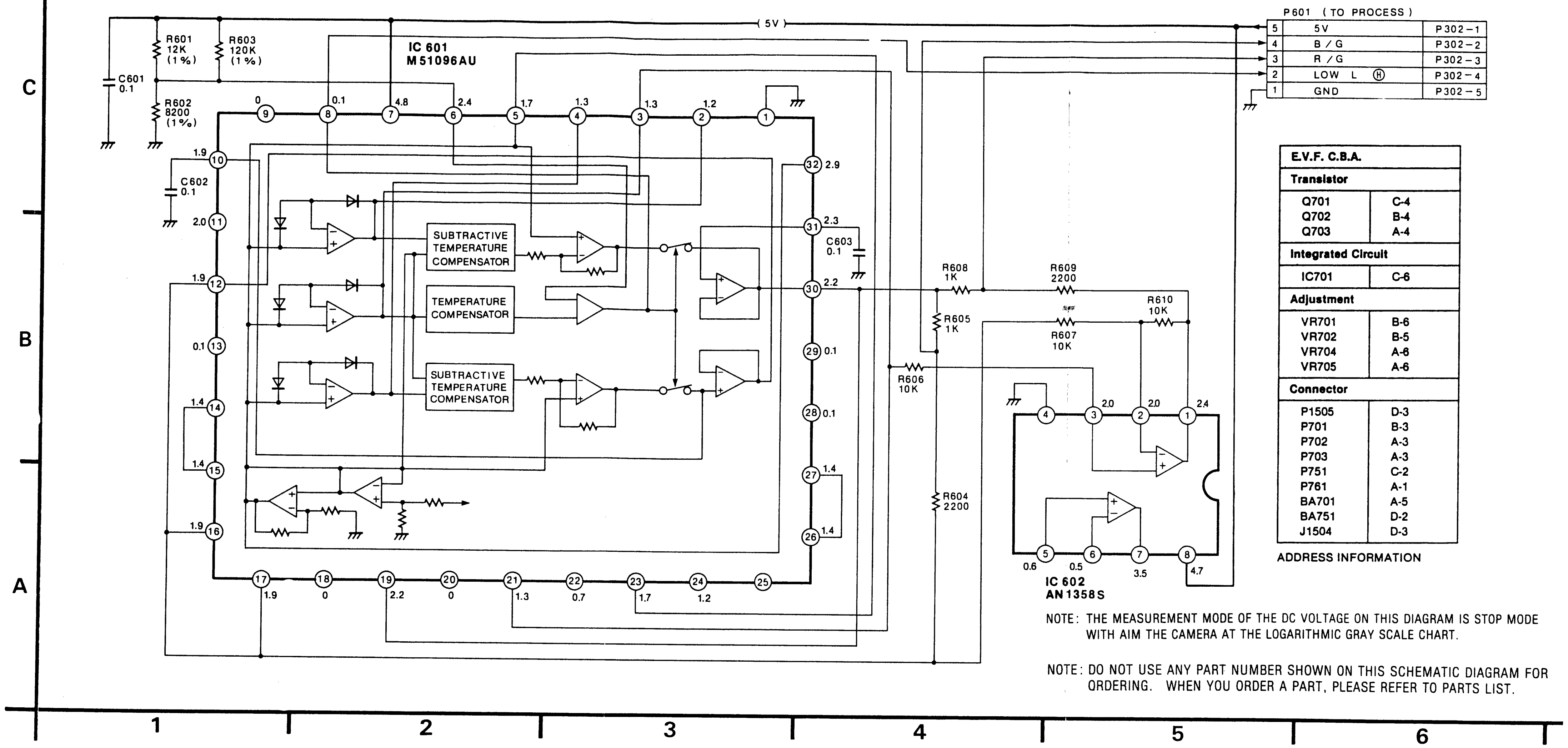
3-9. E.V.F. C.B.A.



E.V.F. JACK C.B.A.
J1504
P1505
E.V.F. TALLY C.B.A. (VEP27043A)
BA751
P751
R751
D751
TALLY
E.V.F. LED C.B.A.
D761
R761
P761
REC
E.V.F. C.B.A.
P701
P702
P703
BA701
IC701
Q701
Q702
Q703
T701
TH701
L701
L702
D701
D702
D703
VR701
VR702
VR704
VR705
R701
R702
R703
R704
R705
R706
R707
R708
R709
R710
R711
R712
R713
R714
R715
R716
R717
R718
R719
R720
R721
R722
R723
R724
R726
R727
R728
R729
R730
R731
C701
C702
C703
C704
C705
C706
C707
C708
C709
C710
C711
C712
C713
C714
C715
C716
C717
C718
C719
C720
C721
C722
G2
G3
H.HOLD
V.SIZE
BRIGHT
FOCUS
D
C
B
A
1
2
3
4
5
6


C706
C703
C702
R702
IC701
C701
R701
R703
R707
R705
VR701
C704
R708
V.SIZE
R704
D703
C718
C719
G2
R729
G3
R726
VR705
R727
R728
BRIGHT
VR704
FOCUS
6

3-10. AWT SCHEMATIC DIAGRAM


5V
R601 12K (1%)
R603 120K (1%)
C601 0.1
R602 8200 (1%)
IC 601
M51096AU
C602 0.1
SUBTRACTIVE TEMPERATURE COMPENSATOR
TEMPERATURE COMPENSATOR
SUBTRACTIVE TEMPERATURE COMPENSATOR
C603 0.1
R608 1K
R609 2200
R610 10K
R607 10K
R605 1K
R606 10K
R604 2200
IC 602
AN1358S
P601 (TO PROCESS)
5 5V P302-1
4 B/G P302-2
3 R/G P302-3
2 LOW L Ⓗ P302-4
1 GND P302-5
C
B
A
1
2
3
4
5
6

E.V.F. C.B.A.	
Transistor	
Q701	C-4
Q702	B-4
Q703	A-4
Integrated Circuit	
IC701	C-6
Adjustment	
VR701	B-6
VR702	B-5
VR704	A-6
VR705	A-6
Connector	
P1505	D-3
P701	B-3
P702	A-3
P703	A-3
P751	C-2
P761	A-1
BA701	A-5
BA751	D-2
J1504	D-3

ADDRESS INFORMATION

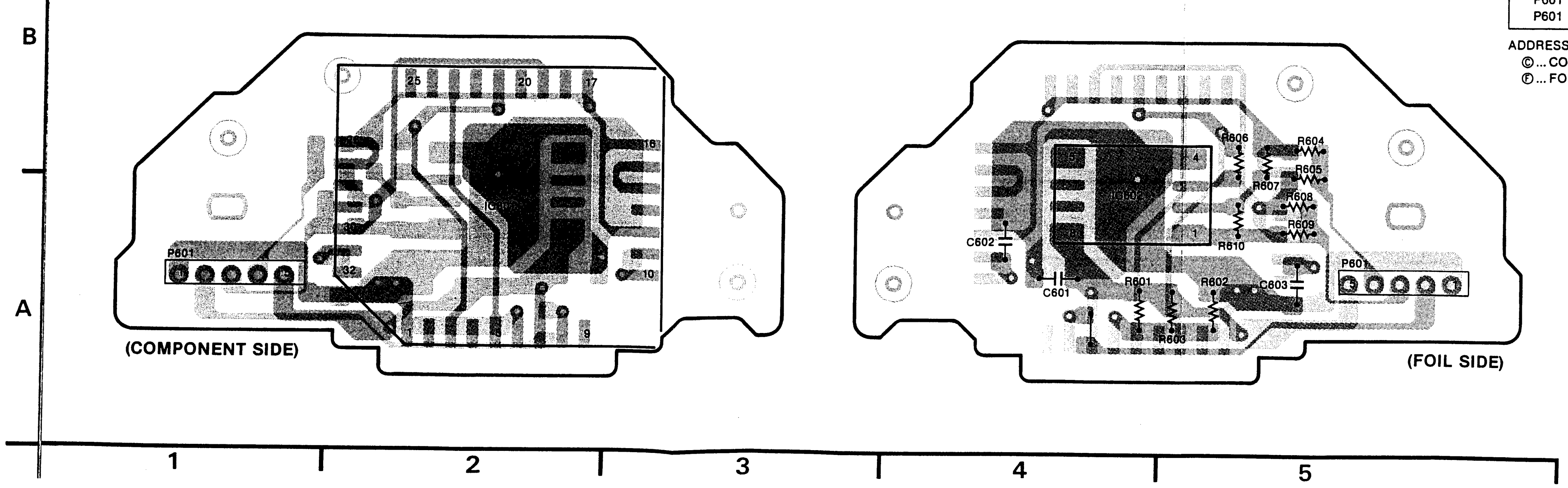
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-11. AWT C.B.A.

AWT C.B.A.	
Integrated Circuit	
IC601	A-2 Ⓒ
IC602	B-4 Ⓕ
Connector	
P601	A-1 Ⓒ
P601	A-5 Ⓕ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE


P601
25
20
17
16
32
10
9
IC601
C602
C601
R606
R607
R604
R605
R608
R609
R610
R601
R602
R603
C603
P601
B
A
1
2
3
4
5

(COMPONENT SIDE)

(FOIL SIDE)

3-12. PROCESS SCHEMATIC DIAGRAM

◀■ LUMINANCE SIGNAL

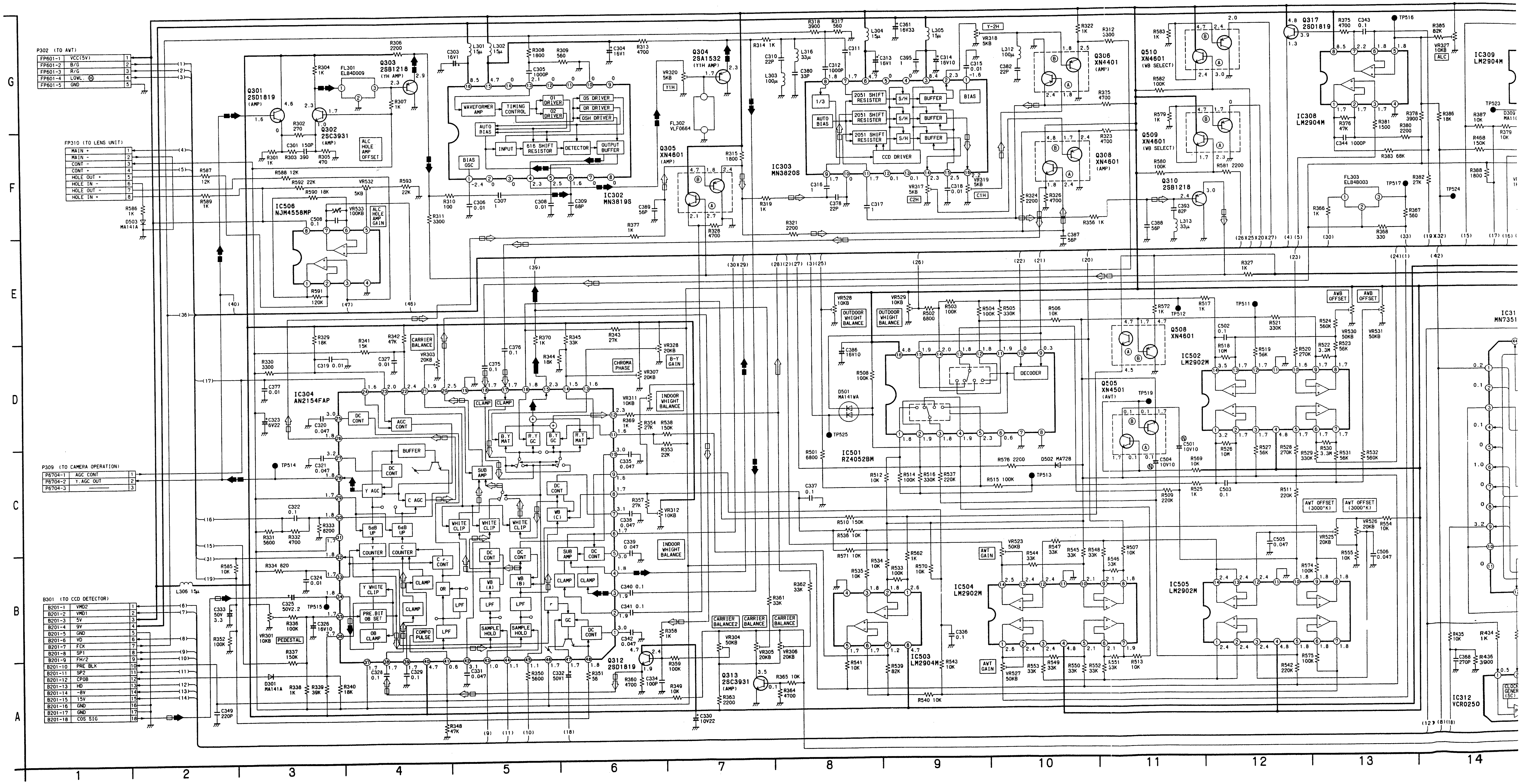
◀□ PRE VIDEO SIGNAL

◁■ CHROMINANCE SIGNAL

◁□ B-Y/R-Y COMPOSITE SIGNAL

◀ R-Y SIGNAL

◁ B-Y SIGNAL

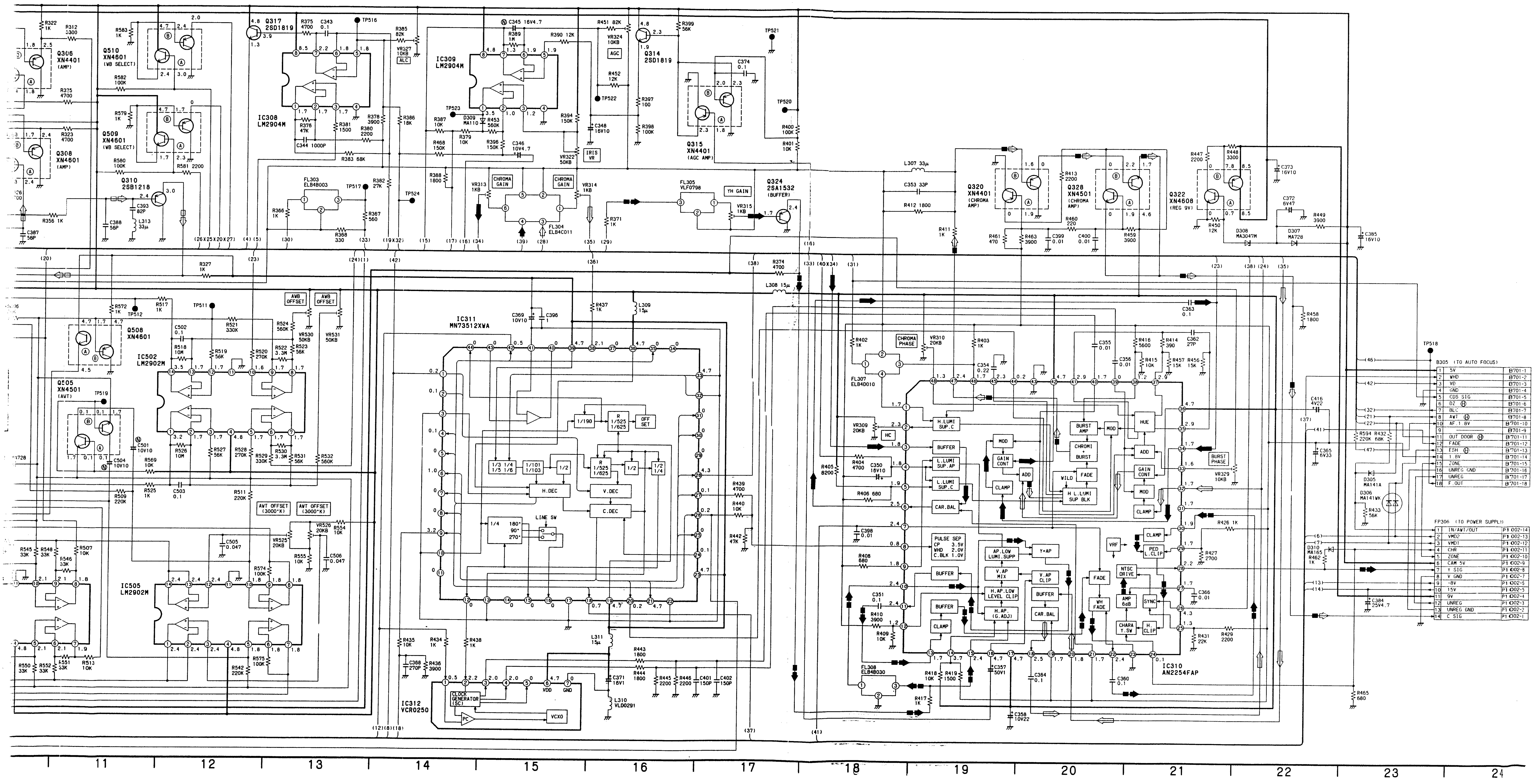


P302 (TO AWT)
FP601-1 VCC(5V)
FP601-2 B/G
FP601-3 R/G
FP601-4 LOWL
FP601-5 GND
FP310 (TO LENS UNIT)
MAIN +
MAIN −
CONT −
CONT +
HOLE OUT +
HOLE IN −
HOLE OUT −
HOLE IN +
P309 (TO CAMERA OPERATION)
P6704-1 AGC CONT
P6704-2 Y.AGC OUT
P6704-3
B301 (TO CCD DETECTOR)
B201-1 VMD2
B201-2 VMD1
B201-3 5V
B201-4 9V
B201-5 GND
B201-6 VD
B201-7 FCK
B201-8 SP1
B201-9 FH/2
B201-10 PRE BLK
B201-11 SP2
B201-12 CPOB
B201-13 HD
B201-14 −8V
B201-15 15V
B201-16 GND
B201-17 GND
B201-18 COS SIG
Q301 2SD1819 (AMP)
Q302 2SC3931 (AMP)
Q303 2SB1218 (YH AMP)
FL301 ELB4D009
ALC HOLE AMP OFFSET
IC506 NJM4558MP
ALC HOLE AMP GAIN
IC302 MN3819S
WAVEFORMER AMP
TIMING CONTROL
Ø1 DRIVER
Ø2 DRIVER
ØS DRIVER
ØR DRIVER
ØSH DRIVER
AUTO BIAS
INPUT
616 SHIFT RESISTOR
DETECTOR
OUTPUT BUFFER
BIAS OSC
Q304 2SA1532 (Y1H AMP)
Q305 XN4601 (AMP)
FL302 VLF0664
IC303 MN3820S
1/3
AUTO BIAS
2051 SHIFT RESISTER
S/H
BUFFER
BIAS
CCD DRIVER
Q306 XN4401 (AMP)
Q308 XN4601 (AMP)
Q510 XN4601 (WB SELECT)
Q509 XN4601 (WB SELECT)
Q310 2SB1218
Q317 2SD1819
IC308 LM2904M
IC309 LM2904M
FL303 ELB4B003
IC304 AN2154FAP
CARRIER BALANCE
CHROMA PHASE
B-Y GAIN
INDOOR WHIGHT BALANCE
DC CONT
AGC CONT
BUFFER
Y AGC
C AGC
6dB UP
Y COUNTER
C COUNTER
C r CONT
Y WHITE CLIP
PRE.BIT OB SET
OB CLAMP
COMPO PULSE
CLAMP
OR
LPF
SAMPLE HOLD
WHITE CLIP
WB (A)
WB (B)
WB (C)
SUB AMP
B-Y MAT
R-Y GC
B-Y GC
R-Y MAT
GC
PEDESTAL
CARRIER BALANCE2
Q312 2SD1819
Q313 2SC3931 (AMP)
D301 MA141A
L306
VR528 OUTDOOR WHIGHT BALANCE
VR529 OUTDOOR WHIGHT BALANCE
D501 MA141WA
IC501 RZ4052BM
DECODER
Q508 XN4601
Q505 XN4501 (AWT)
IC502 LM2902M
AWB OFFSET
AWT OFFSET (3000°K)
IC503 LM2904M
IC504 LM2902M
AWT GAIN
IC505 LM2902M
IC312 VCR0250
IC31 MN7351
TP511 TP512 TP513 TP514 TP515 TP516 TP517 TP519 TP523 TP524 TP525
D502 MA728
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G

Back Page:
E.V.F. & AWT Section

R-Y SIGNAL

B-Y SIGNAL


Q306 XN4401 (AMP)
Q308 XN4601 (AMP)
Q510 XN4601 (WB SELECT)
Q509 XN4601 (WB SELECT)
Q310 2SB1218
Q317 2SD1819
IC308 LM2904M
IC309 LM2904M
Q314 2SD1819
Q315 XN4401 (AGC AMP)
Q324 2SA1532 (BUFFER)
Q320 XN4401 (CHROMA AMP)
Q328 XN4501 (CHROMA AMP)
Q322 XN4608 (REG 9V)
FL303 ELB4B003
FL304 ELB4C011
FL305 VLF0798
FL307 ELB4D010
FL308 ELB4B030
TP516
TP517
TP520
TP521
TP522
TP523
TP524
TP511
TP512
TP518
TP519
AGC
ALC
IRIS VR
CHROMA GAIN
YH GAIN
CHROMA PHASE
AWB OFFSET
AWT OFFSET (3000°K)
Q508 XN4601
Q505 XN4501 (AWT)
IC502 LM2902M
IC505 LM2902M
IC311 MN73512XWA
1/190
R 1/525 1/625
OFF SET
1/3 1/4 1/5 1/6
1/101 1/103
1/2
H.DEC
V.DEC
C.DEC
LINE SW
1/4 180° 90° 270°
IC312 VCR0250
CLOCK GENERATOR (SC)
PC
VCXO
VDD
GND
L311 15μ
L310 VLD0291
IC310 AN2254FAP
H.LUMI SUP.C
BUFFER
L.LUMI SUP.AP
L.LUMI SUP.C
CAR.BAL
PULSE SEP CP 3.5V WHD 2.0V C.BLK 1.0V
AP.LOW LUMI.SUPP
V.AP MIX
H.AP.LOW LEVEL CLIP
H.AP (G.ADJ)
CLAMP
MOD
GAIN CONT
ADD
BURST AMP
CHROMI + BURST
WILD
FADE
H L.LUMI SUP BLK
HUE
BURST PHASE
Y+AP
V.AP CLIP
WH FADE
AMP 6dB
SYNC
CHARA Y.SW
H. CLIP
NTSC DRIVE
VRF
PED L.CLIP
HC
B305 (TO AUTO FOCUS)
1 5V B701-1
2 WHD B701-2
3 VD B701-3
4 GND B701-4
5 CDS SIG B701-5
6 DZ Ⓗ B701-6
7 BLC B701-7
8 AWT Ⓗ B701-8
10 AF.1.8V B701-10
9 B701-9
11 OUT DOOR Ⓗ B701-11
12 FADE B701-12
13 ESH Ⓗ B701-13
14 1.8V B701-14
15 ZONE B701-15
16 UNREG GND B701-16
17 UNREG B701-17
18 F.OUT B701-18
FP306 (TO POWER SUPPLY)
1 IN/AWT/OUT P1 002-14
2 VMD2 P1 002-13
3 VMD1 P1 002-12
4 CHR P1 002-11
5 ZONE P1 002-10
6 CAM 5V P1 002-9
7 Y SIG P1 002-8
8 V GND P1 002-7
9 -8V P1 002-6
10 15V P1 002-5
11 9V P1 002-4
12 UNREG P1 002-3
13 UNREG GND P1 002-2
14 C SIG P1 002-1
11
12
13
14
15
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19
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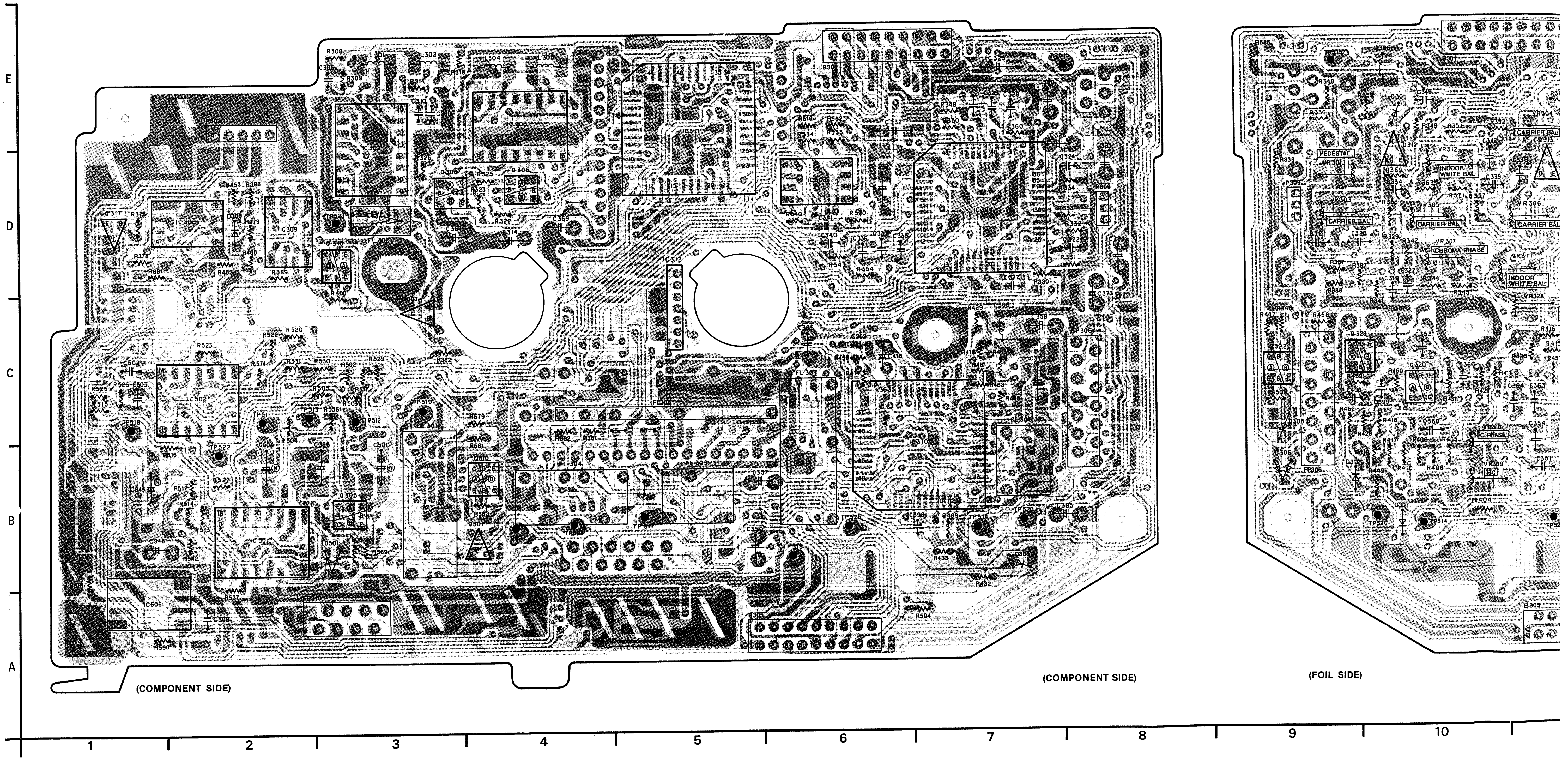
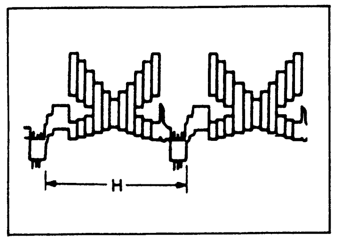
22
23
24

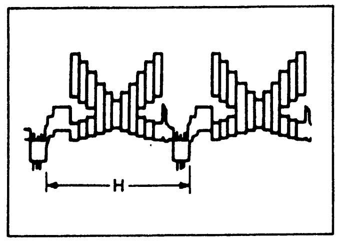
3-13. PROCESS C.B.A.


E
D
C
B
A
(COMPONENT SIDE)
(COMPONENT SIDE)
(FOIL SIDE)
1
2
3
4
5
6
7
8
9
10
IC301
IC302
IC303
IC308
IC309
IC312
IC502
IC506
TP514
TP515
TP520
CARRIER BAL
PEDESTAL
INDOOR WHITE BAL
CHROMA PHASE
C.PHASE

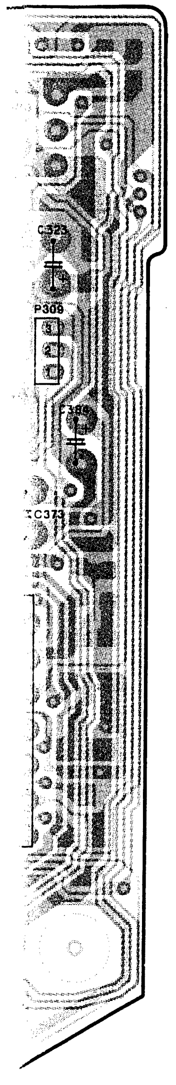
PROCESS CIRCUIT TP (Test Point)
WAVEFORM (REF. NO. 500 Series)



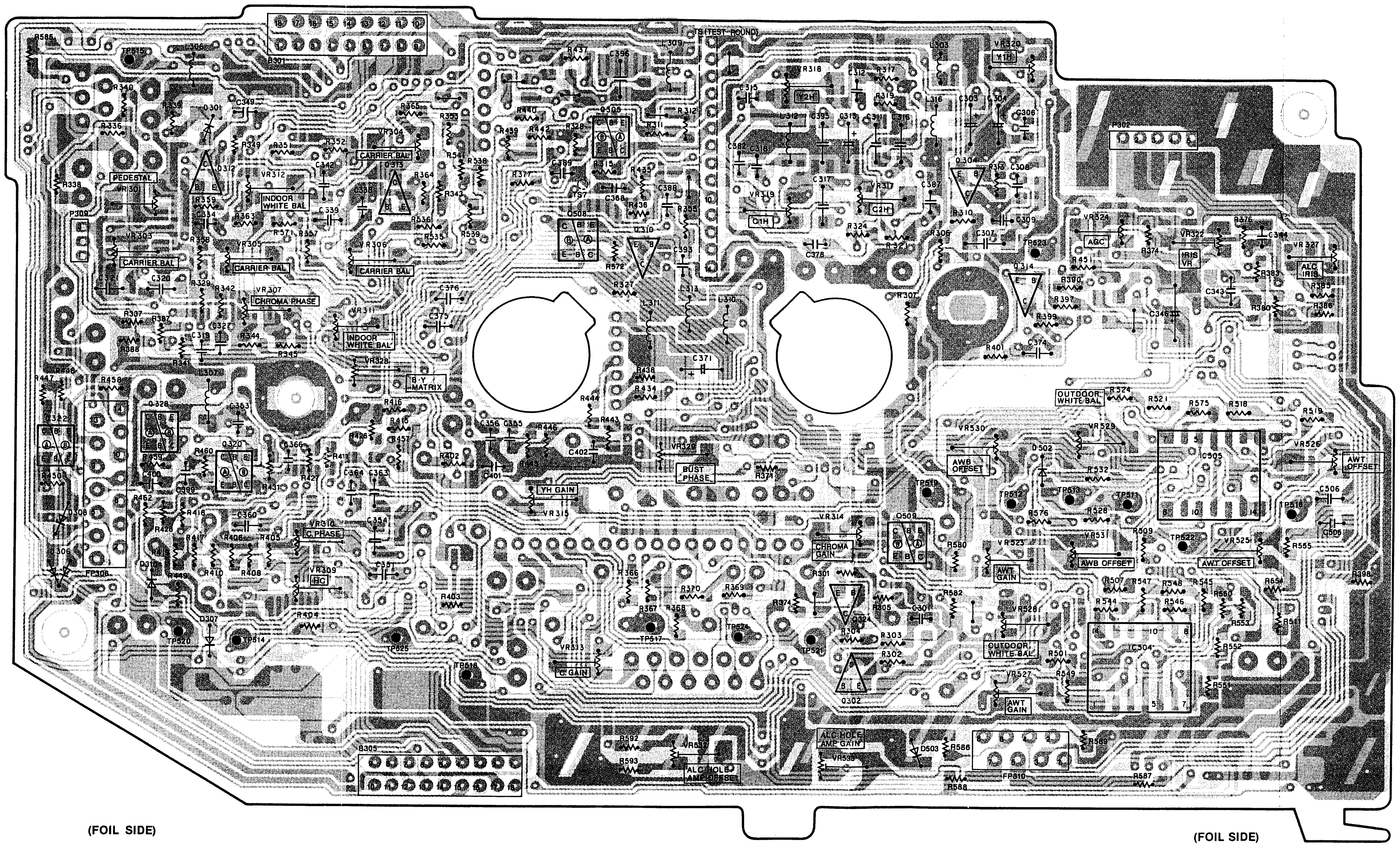
TP514 STOP
0.1V/20μsec. div. 0.32Vp-p



TP515 STOP
0.1V/20μsec. div. 0.45Vp-p



E NT SIDE)



TP(TEST ROUND)
PEDESTAL
CARRIER BAL
INDOOR WHITE BAL
CHROMA PHASE
B-Y MATRIX
YH GAIN
BUST PHASE
C PHASE
HC
C GAIN
Y1H
Y2H
Q1H
C2H
AGC
IRIS VR
ALC IRIS
OUTDOOR WHITE BAL
AWB OFFSET
AWT OFFSET
CHROMA GAIN
AWT GAIN
ALC HOLE AMP GAIN
8
9
10
11
12
13
14
15
16

(FOIL SIDE)

(FOIL SIDE)

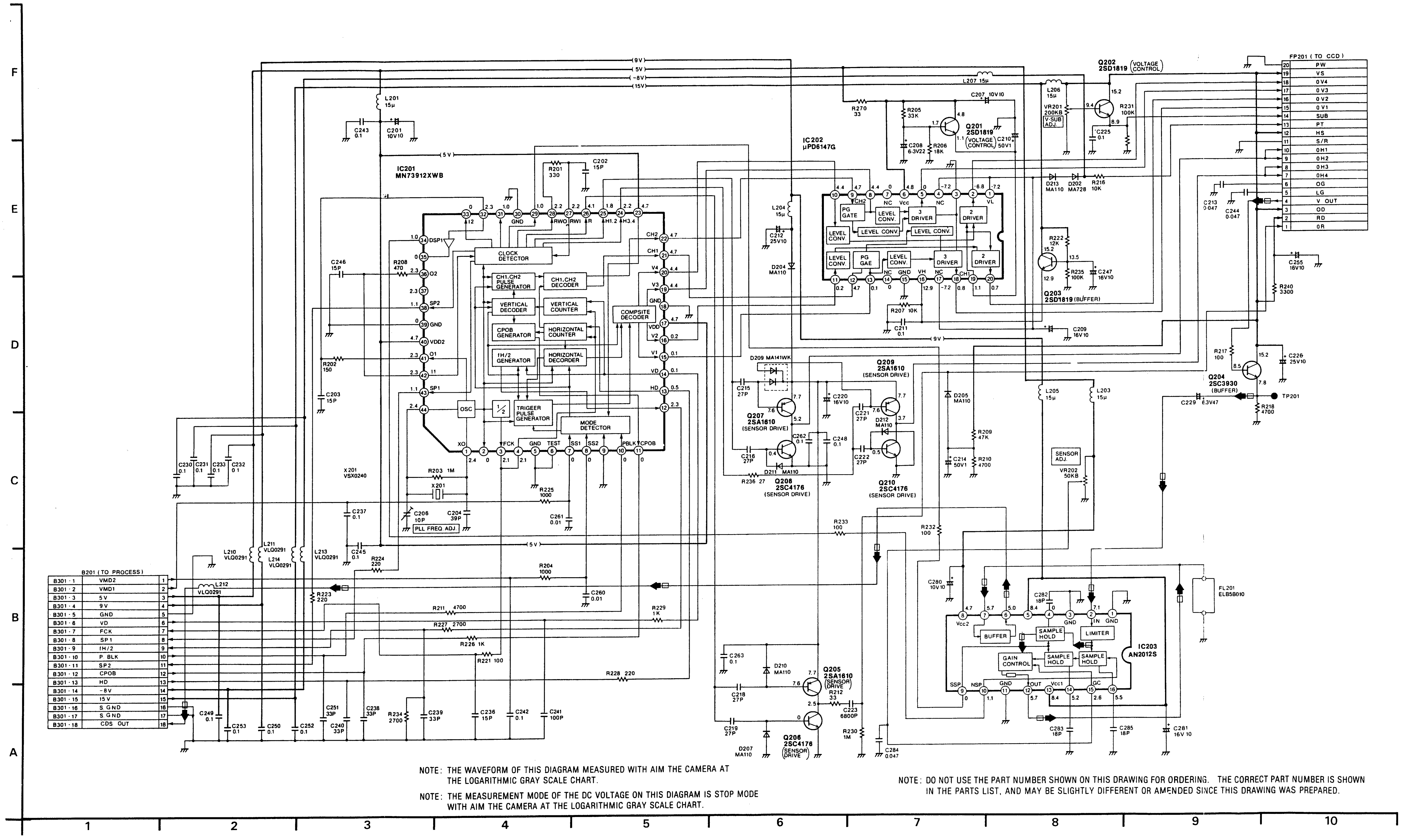
PROCESS C.B.A.

Transistor	
Q301	B-4 ©
Q302	B-13 Ⓕ
Q303	C-3 ©
Q304	D-14 Ⓕ
Q305	E-12 Ⓕ
Q306	D-4 ©
Q308	D-3 ©
Q310	D-12 Ⓕ
Q312	D-10 Ⓕ
Q313	D-11 Ⓕ
Q314	D-14 Ⓕ
Q315	D-3 ©
Q317	D-1 ©
Q320	C-10 Ⓕ
Q322	C-9 Ⓕ
Q324	B-13 Ⓕ
Q328	C-9 Ⓕ
Q505	B-3 ©
Q508	D-12 Ⓕ
Q509	C-14 Ⓕ
Q510	B-4 ©
Integrated Circuit	
IC302	E-3 ©
IC303	E-4 ©
IC304	D-7 ©
IC308	D-2 ©
IC309	D-2 ©
IC310	B-7 ©
IC311	E-5 ©
IC312	D-5 ©
IC501	B-2 ©
IC502	C-2 ©
IC503	D-6 ©
IC504	B-15 Ⓕ
IC505	C-15 Ⓕ
IC506	A-1 ©
Test Point	
TP511	C-15 Ⓕ
TP511	C-2 ©
TP512	C-14 Ⓕ
TP512	C-3 ©
TP513	C-14 Ⓕ
TP513	C-2 ©
TP514	B-10 Ⓕ
TP514	B-7 ©
TP515	E-8 ©
TP515	E-9 Ⓕ
TP516	C-1 ©
TP516	C-16 Ⓕ
TP517	B-12 Ⓕ
TP517	B-5 ©
TP518	B-11 Ⓕ
TP518	B-6 ©
TP519	C-14 Ⓕ
TP519	C-3 ©
TP520	B-10 Ⓕ
TP520	B-7 ©
TP521	B-13 Ⓕ
TP521	B-4 ©
TP522	B-15 Ⓕ
TP522	B-2 ©
TP523	D-14 Ⓕ
TP523	D-3 ©
TP524	B-13 Ⓕ
TP524	B-4 ©
TP525	B-11 Ⓕ
TP525	B-6 ©
Adjustment	
VR301	D-9 Ⓕ
VR303	D-9 Ⓕ
VR304	E-11 Ⓕ
VR305	D-10 Ⓕ
VR306	D-11 Ⓕ
VR307	D-10 Ⓕ
VR309	B-10 Ⓕ
VR310	B-10 Ⓕ
VR311	D-11 Ⓕ
VR312	D-10 Ⓕ
VR313	B-12 Ⓕ
VR314	C-13 Ⓕ
VR315	C-12 Ⓕ
VR317	D-13 Ⓕ
VR318	E-13 Ⓕ
VR319	D-13 Ⓕ
VR320	E-14 Ⓕ
VR322	D-15 Ⓕ
VR324	D-15 Ⓕ
VR327	D-16 Ⓕ
VR328	C-11 Ⓕ
VR329	C-12 Ⓕ
VR523	B-14 Ⓕ
VR525	B-15 Ⓕ
VR526	C-16 Ⓕ
VR527	B-14 Ⓕ
VR528	B-14 Ⓕ
VR529	C-15 Ⓕ
VR530	C-14 Ⓕ
VR531	B-15 Ⓕ
VR532	A-12 Ⓕ
VR533	A-13 Ⓕ
Connector	
B301	E-10 Ⓕ
B301	E-6 ©
B305	A-11 Ⓕ
B305	A-6 ©
FP306	B-9 Ⓕ
FP306	C-8 ©
FP310	A-14 Ⓕ
FP310	A-3 ©
P302	E-15 Ⓕ
P302	E-2 ©
P309	D-8 ©
P309	D-9 Ⓕ

ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

3-14. CCD DRIVE SCHEMATIC DIAGRAM

◀□ PRE VIDEO SIGNAL

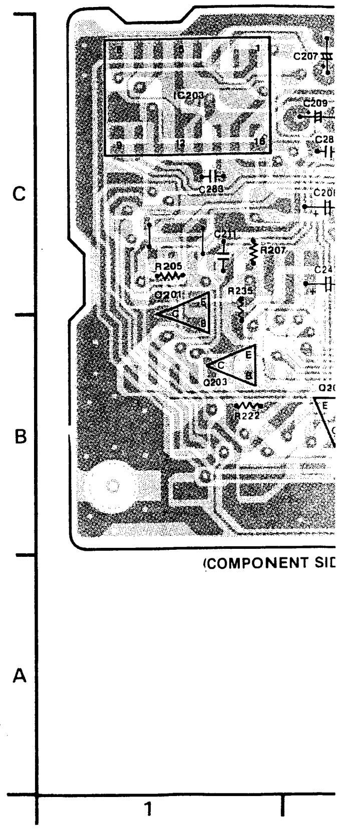

IC201
MN73912XWB
CLOCK DETECTOR
CH1,CH2 PULSE GENERATOR
CH1,CH2 DECODER
VERTICAL DECODER
VERTICAL COUNTER
CPOB GENERATOR
HORIZONTAL COUNTER
fH/2 GENERATOR
HORIZONTAL DECORDER
COMPSITE DECODER
OSC
TRIGEER PULSE GENERATOR
MODE DETECTOR
PLL FREQ ADJ
X201 VSX0240
IC202
μPD6147G
PG GATE
LEVEL CONV
3 DRIVER
2 DRIVER
Q201 2SD1819 (VOLTAGE CONTROL)
Q202 2SD1819 (VOLTAGE CONTROL)
VR201 200KB V-SUB ADJ
Q203 2SD1819 (BUFFER)
Q204 2SC3930 (BUFFER)
TP201
FP201 (TO CCD)
20 PW
19 VS
18 0V4
17 0V3
16 0V2
15 0V1
14 SUB
13 PT
12 HS
11 S/R
10 0H1
9 0H2
8 0H3
7 0H4
6 0G
5 LG
4 V OUT
3 OD
2 RD
1 0R
Q207 2SA1610 (SENSOR DRIVE)
Q208 2SC4176 (SENSOR DRIVE)
Q209 2SA1610 (SENSOR DRIVE)
Q210 2SC4176 (SENSOR DRIVE)
Q205 2SA1610 (SENSOR DRIVE)
Q206 2SC4176 (SENSOR DRIVE)
D209 MA141WK
SENSOR ADJ
VR202 50KB
IC203
AN2012S
BUFFER
SAMPLE HOLD
LIMITER
GAIN CONTROL
FL201 ELB5B010
B201 (TO PROCESS)
B301-1 VMD2 1
B301-2 VMD1 2
B301-3 5V 3
B301-4 9V 4
B301-5 GND 5
B301-6 VD 6
B301-7 FCK 7
B301-8 SP1 8
B301-9 fH/2 9
B301-10 P.BLK 10
B301-11 SP2 11
B301-12 CPOB 12
B301-13 HD 13
B301-14 -8V 14
B301-15 15V 15
B301-16 S.GND 16
B301-17 S.GND 17
B301-18 CDS OUT 18
(9V)
(5V)
(-8V)
(15V)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

NOTE: THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

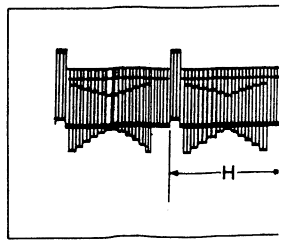
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-15. CCD DRIVE


C
B
A
1
R205
R207
Q201
Q203
R222
C207
C209
C288

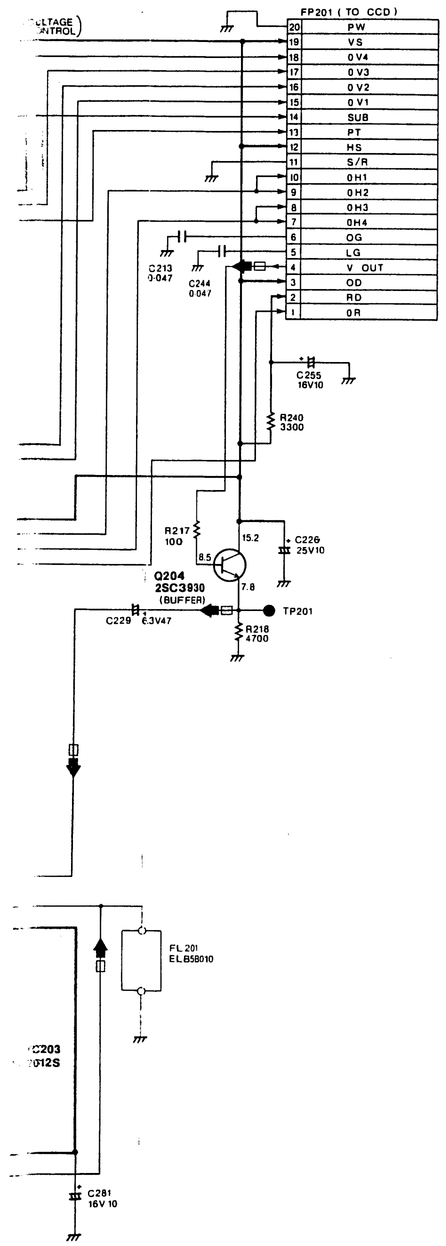
(COMPONENT SI

CCD DRIVE CIRCUIT TP WAVEFORM (REF. NO. 2



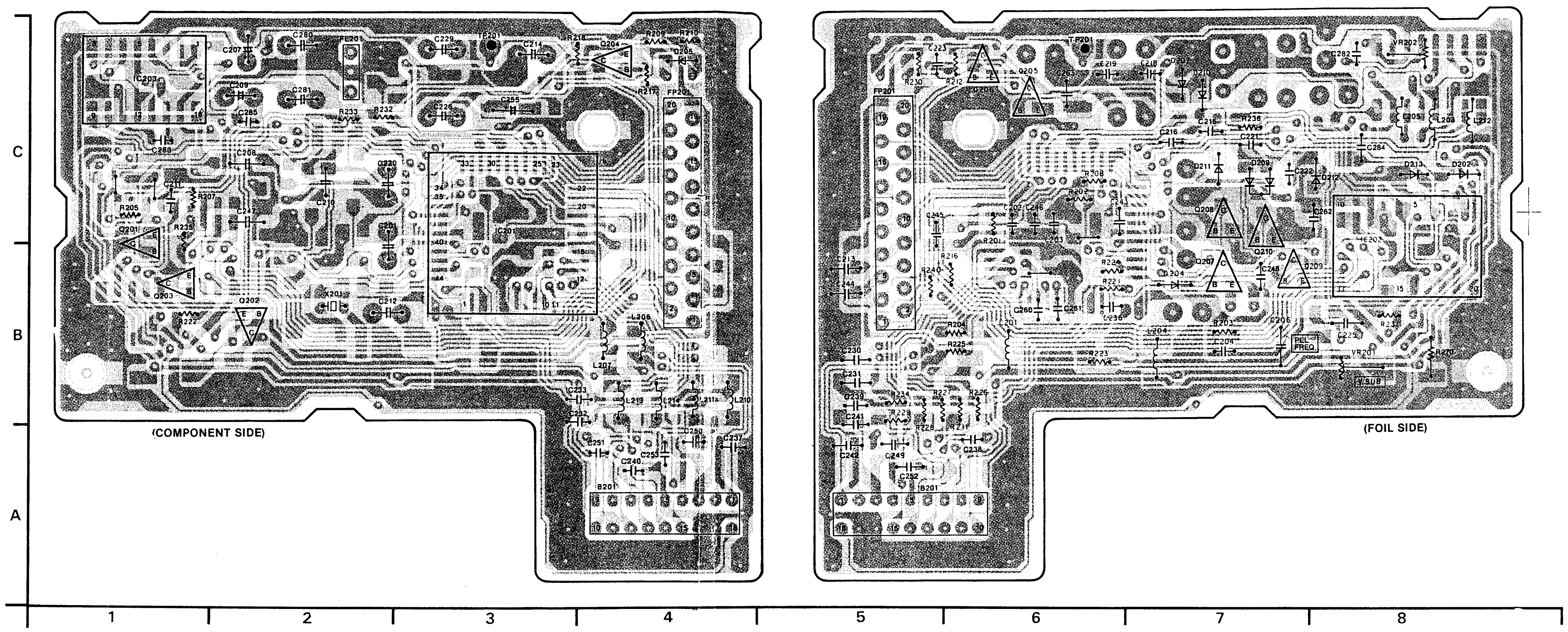
TP201 STOP
0.2V/20μsec. div. 0.8Vp-p

Back Page:
PROCESS Section

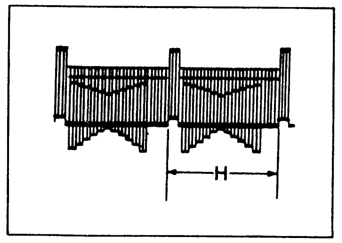

VOLTAGE CONTROL
FP201 (TO CCD)
20 PW
19 VS
18 0V4
17 0V3
16 0V2
15 0V1
14 SUB
13 PT
12 HS
11 S/R
10 0H1
9 0H2
8 0H3
7 0H4
6 OG
5 LG
4 V OUT
3 OD
2 RD
1 0R
C213 0.047
C244 0.047
C255 16V10
R240 3300
R217 100
15.2
8.5
7.8
C226 25V10
Q204 2SC3930 (BUFFER)
C229 6.3V47
TP201
R218 4700
FL201 ELB5B010
C203
012S
C281 16V 10
9
10

IG FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN
OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-15. CCD DRIVE C.B.A.


C
B
A
1
2
3
4
5
6
7
8
(COMPONENT SIDE)
(FOIL SIDE)
IC201
IC202
IC203
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
TP201
FP201
B201
VR201
VR202
R205
R207
R217
R232
R233
C206
C207
C209
C210
C212
C229
C280
C281
C285
L207
L208
PLL FREQ
V SUB

CCD DRIVE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 200 Series)



TP201 STOP
0.2V/20μsec. div. 0.8Vp-p

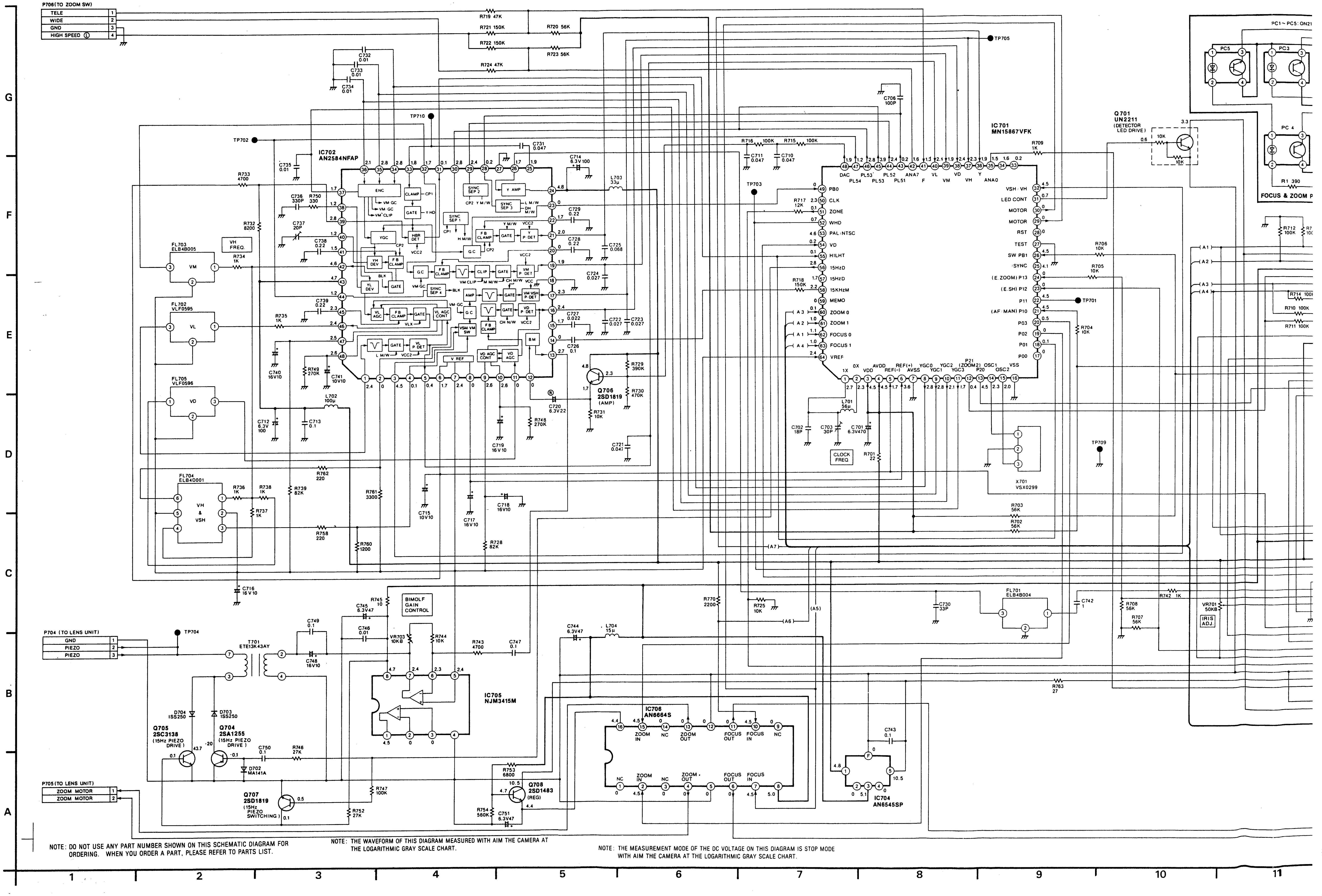
CCD DRIVE C.B.A.

Transistor	
Q201	C-1 Ⓒ
Q202	B-2 Ⓒ
Q203	B-1 Ⓒ
Q204	C-4 Ⓒ
Q205	C-6 Ⓕ
Q206	C-6 Ⓕ
Q207	B-7 Ⓕ
Q208	C-7 Ⓕ
Q209	B-7 Ⓕ
Q210	B-7 Ⓕ
Integrated Circuit	
IC201	C-3 Ⓒ
IC202	B-8 Ⓕ
IC203	C-1 Ⓒ

Test Point	
TP201	C-3 Ⓒ
TP201	C-6 Ⓕ
Adjustment	
C206	B-7 Ⓕ
VR201	B-8 Ⓕ
Connector	
B201	A-4 Ⓒ
B201	A-5 Ⓕ
FP201	C-4 Ⓒ
FP201	C-5 Ⓕ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

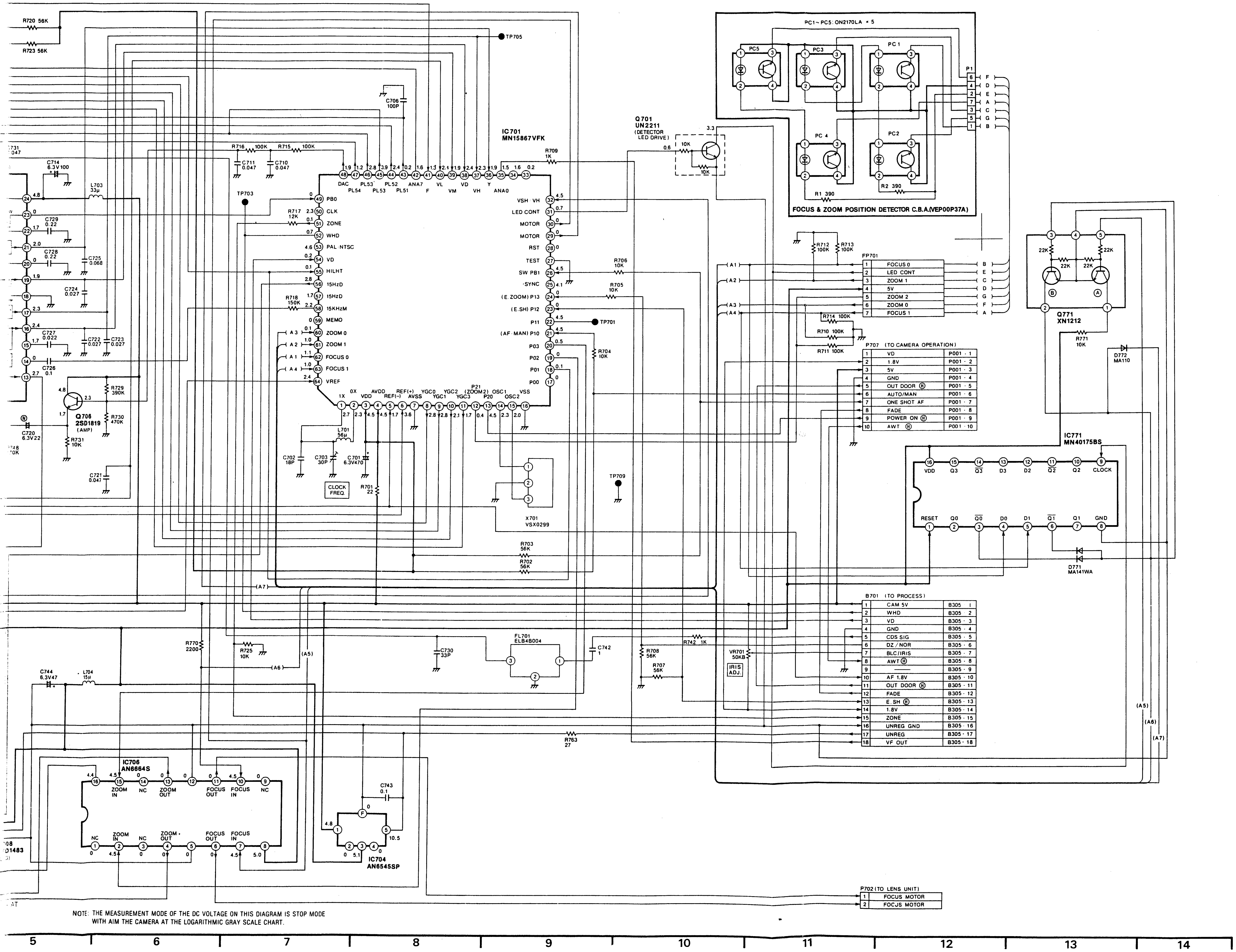
3-16. AUTO FOCUS SCHEMATIC DIAGRAM


P706 (TO ZOOM SW)
TELE
WIDE
GND
HIGH SPEED ①
R719 47K
R721 150K
R720 56K
R722 150K
R723 56K
R724 47K
C732 0.01
C733 0.01
C734 0.01
TP705
TP710
TP702
IC702
AN2584NFAP
C731 0.047
C714 6.3V100
L703 33µ
C735 0.01
R733 4700
C736 330P
R750 330
R732 8200
C737 20P
C738 0.22
FL703 ELB4B005
VM
VH FREQ.
R734 1K
FL702 VLF0595
VL
C739 0.22
R735 1K
FL705 VLF0596
VD
C740 16V10
R749 270K
C741 10V10
L702 100µ
C712 6.3V 100
C713 0.1
ENC
CLAMP
GATE
YGC
HBR DET
YH DEV
FB CLAMP
YL DEV
SYNC SEP 1
SYNC SEP 2
SYNC SEP 3
SYNC SEP 4
Y AMP
GC
CLIP
P DET
VM P DET
VM VSH P DET
VD P DET
VL AGC
VL AGC CONT
VSH VM SW
V REF
VD AGC CONT
VD AGC
BM
C729 0.22
C728 0.22
C725 0.068
C724 0.027
C727 0.022
C722 0.027
C723 0.027
C726 0.1
Q706 2SD1819 (AMP)
R729 390K
R730 470K
R731 10K
C720 6.3V22
R748 270K
C719 16V10
C721 0.047
FL704 ELB4D001
VH & VSH
R736 1K
R738 1K
R739 82K
R737 1K
R762 220
R761 3300
R758 220
R760 1200
C715 10V10
C717 16V10
C718 16V10
R728 82K
C716 16V10
TP703
IC701
MN15867VFK
C706 100P
R716 100K
R715 100K
C711 0.047
C710 0.047
R709 1K
R717 12K
R718 150K
PB0
CLK
ZONE
WHD
PAL/NTSC
VD
HILHT
15HzD
15HzD
15KHzM
MEMO
ZOOM 0
ZOOM 1
FOCUS 0
FOCUS 1
VREF
VSH·VH
LED CONT
MOTOR
MOTOR
RST
TEST
SW PB1
SYNC
(E.ZOOM) P13
(E.SH) P12
P11
(AF·MAN) P10
P03
P02
P01
P00
DAC
PL54
PL53
PL52
PL51
ANA7
ANA0
VDD
AVDD
AVSS
REF(+)
REF(−)
YGC0
YGC1
YGC2
YGC3
P21 (ZOOM2)
P20
OSC1
OSC2
VSS
R706 10K
R705 10K
TP701
R704 10K
L701 56µ
C702 18P
C703 30P
C701 6.3V470
CLOCK FREQ
R701 22
X701 VSX0299
TP709
R703 56K
R702 56K
Q701 UN2211 (DETECTOR LED DRIVE)
10K
10K
PC1~PC5: ON21
PC5
PC3
PC4
R1 390
FOCUS & ZOOM P
R712 100K
R714 100
R710 100K
R711 100K
(A1)
(A2)
(A3)
(A4)
(A5)
(A6)
(A7)
P704 (TO LENS UNIT)
GND
PIEZO
PIEZO
TP704
T701 ETE13K43AY
C749 0.1
C748 16V10
C745 6.3V47
R745 10
BIMOLF GAIN CONTROL
C746 0.01
VR703 10KB
R744 10K
R743 4700
C747 0.1
IC705 NJM3415M
D704 1SS250
D703 1SS250
Q705 2SC3138 (15Hz PIEZO DRIVE)
Q704 2SA1255 (15Hz PIEZO DRIVE)
C750 0.1
R746 27K
D702 MA141A
Q707 2SD1819 (15Hz PIEZO SWITCHING)
R747 100K
R752 27K
P705 (TO LENS UNIT)
ZOOM MOTOR
ZOOM MOTOR
R753 6800
Q708 2SD1483 (REG)
R754 560K
C751 6.3V47
C744 6.3V47
L704 15µ
R770 2200
R725 10K
IC706 AN6664S
ZOOM IN
ZOOM OUT
FOCUS OUT
FOCUS IN
NC
C743 0.1
IC704 AN6545SP
C730 33P
FL701 ELB4B004
C742 1
R708 56K
R707 56K
R742 1K
VR701 50KB
IRIS ADJ.
R763 27

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

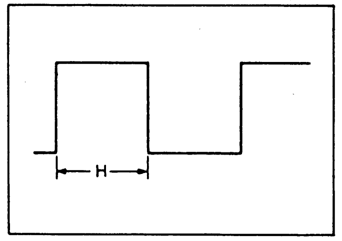
NOTE: THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

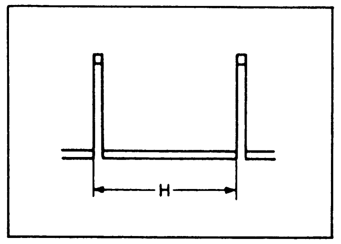

IC701 MN15867VFK
Q701 UN2211 (DETECTOR LED DRIVE)
PC1~PC5: ON2170LA × 5
FOCUS & ZOOM POSITION DETECTOR C.B.A.(VEP00P37A)
Q771 XN1212
IC771 MN40175BS
D772 MA110
D771 MA141WA
Q706 2SD1819 (AMP)
IC706 AN6664S
IC704 AN6545SP
FL701 ELB4B004
X701 VSX0299
VR701 50KB IRIS ADJ.
CLOCK FREQ.
TP701
TP703
TP705
TP709
FP701
1 FOCUS 0
2 LED CONT
3 ZOOM 1
4 5V
5 ZOOM 2
6 ZOOM 0
7 FOCUS 1
P707 (TO CAMERA OPERATION)
1 VD P001-1
2 1.8V P001-2
3 5V P001-3
4 GND P001-4
5 OUT DOOR Ⓗ P001-5
6 AUTO/MAN P001-6
7 ONE SHOT AF P001-7
8 FADE P001-8
9 POWER ON Ⓗ P001-9
10 AWT Ⓗ P001-10
B701 (TO PROCESS)
1 CAM 5V B305-1
2 WHD B305-2
3 VD B305-3
4 GND B305-4
5 CDS SIG B305-5
6 DZ/NOR B305-6
7 BLC/IRIS B305-7
8 AWT Ⓗ B305-8
9 — B305-9
10 AF 1.8V B305-10
11 OUT DOOR Ⓗ B305-11
12 FADE B305-12
13 E.SH Ⓗ B305-13
14 1.8V B305-14
15 ZONE B305-15
16 UNREG GND B305-16
17 UNREG B305-17
18 VF OUT B305-18
P702 (TO LENS UNIT)
1 FOCUS MOTOR
2 FOCUS MOTOR
5
6
7
8
9
10
11
12
13
14

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

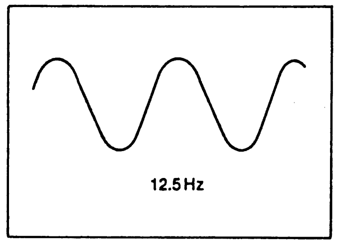
AUTO FOCUS CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 700 Series)



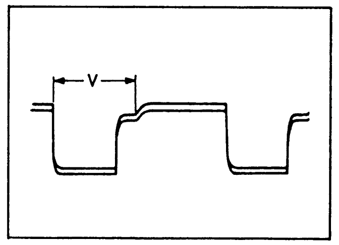
TP702 STOP
2.0V/20μsec. div. 4.5Vp-p



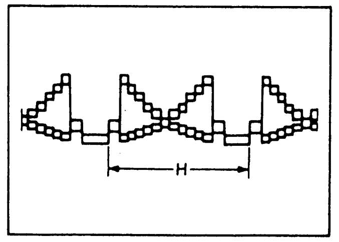
TP703 STOP
2.0V/20μsec. div. 5.0Vp-p



TP704 STOP
10.0V/20msec. div. 30Vp-p



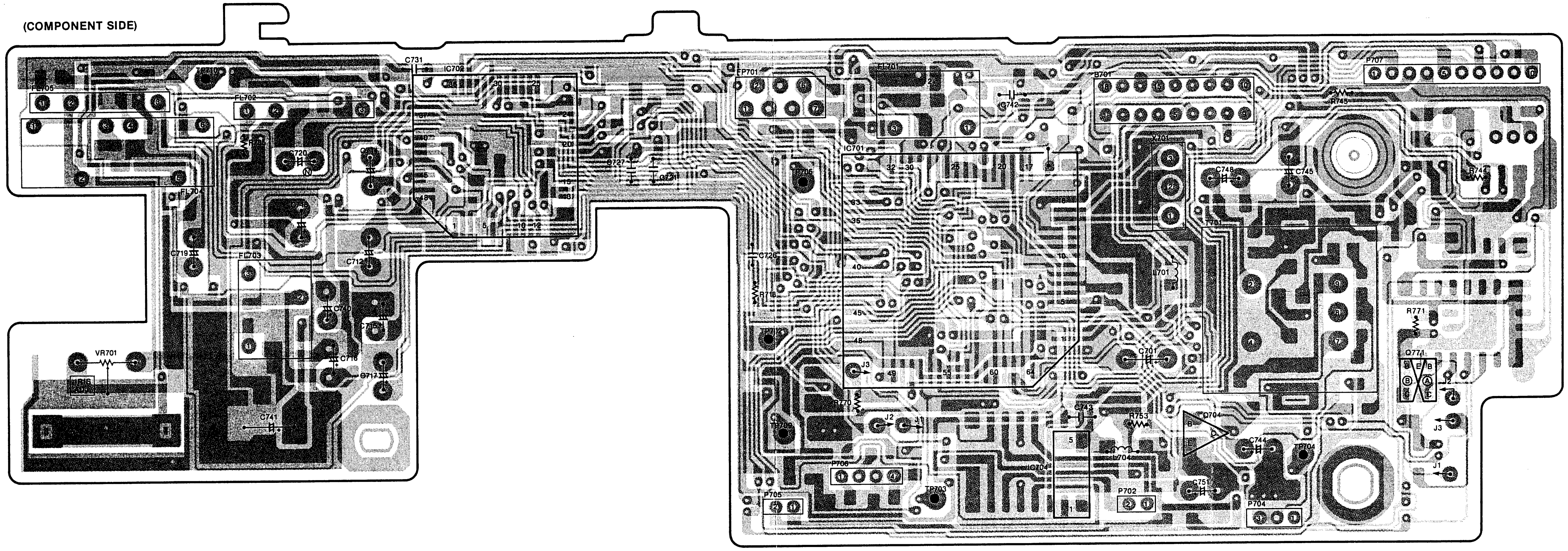
TP705 STOP
0.5V/5msec. div. 1.3Vp-p



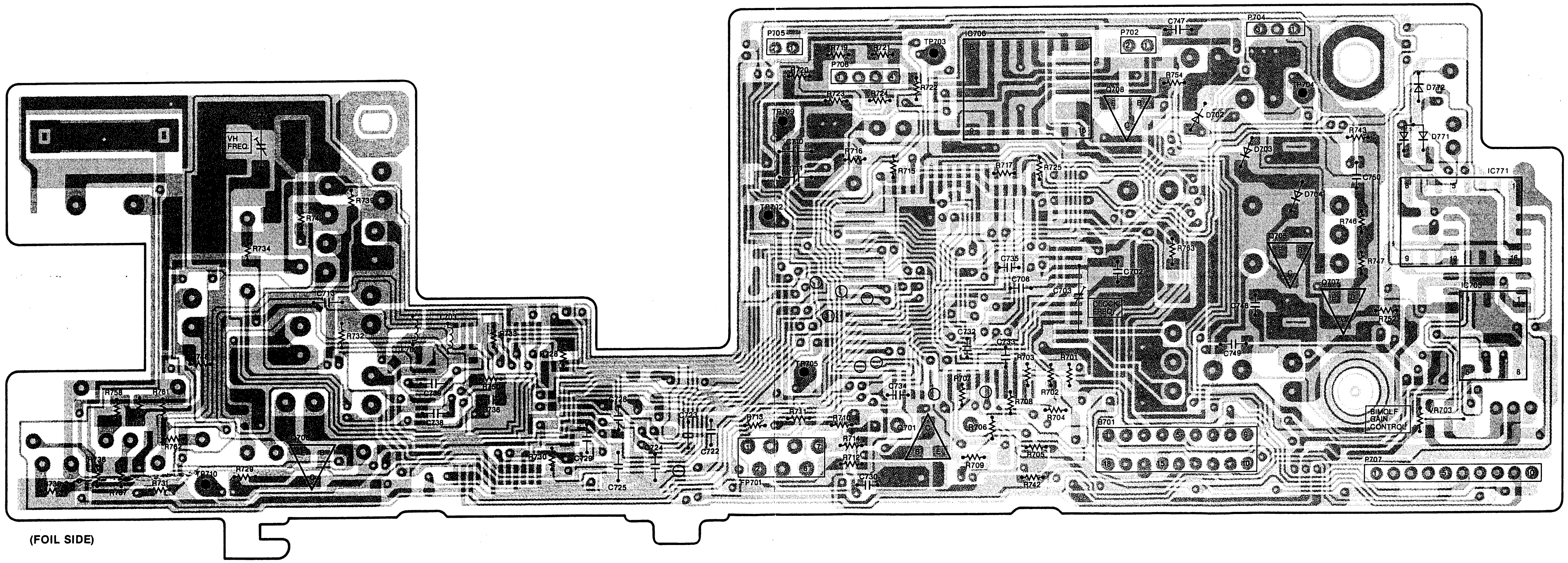
TP710 STOP
0.1V/20μsec. div. 0.3Vp-p

3-17. AUTO FOCUS C.B.A.

(COMPONENT SIDE)



FL705
FL702
FL701
FL703
C731
IC702
C727
C721
EP701
C742
B701
P707
R745
IC701
X701
C748
C745
R742
R771
Q771
VR701
R716
C719
C712
C720
C740
C741
C726
C701
C743
R753
D704
C744
L701
R770
J1
J2
J3
P706
P705
P702
P704
IC704
TP703
TP705
TP709
C751



VH FREQ.
R739
R734
R732
R728
R758
R761
R731
R737
R729
TP740
C725
C722
C724
C738
P705
P706
TP703
IC706
P702
C747
P704
Q708
R754
D702
D703
D772
D771
R743
R725
R717
R716
R715
TP709
TP702
C750
IC771
D704
R746
R747
R763
C735
C708
C702
C703
C732
C733
Q702
Q707
R752
C746
C749
IC705
R703
R701
R702
R704
R705
R706
R707
R708
R709
R742
R713
R714
R712
R711
R710
C734
C730
Q701
TP705
B701
P707
EP701
BIMOLF GAIN CONTROL
VR703

(FOIL SIDE)

F
E
D
C
B
A

1 2 3 4 5 6 7 8 9

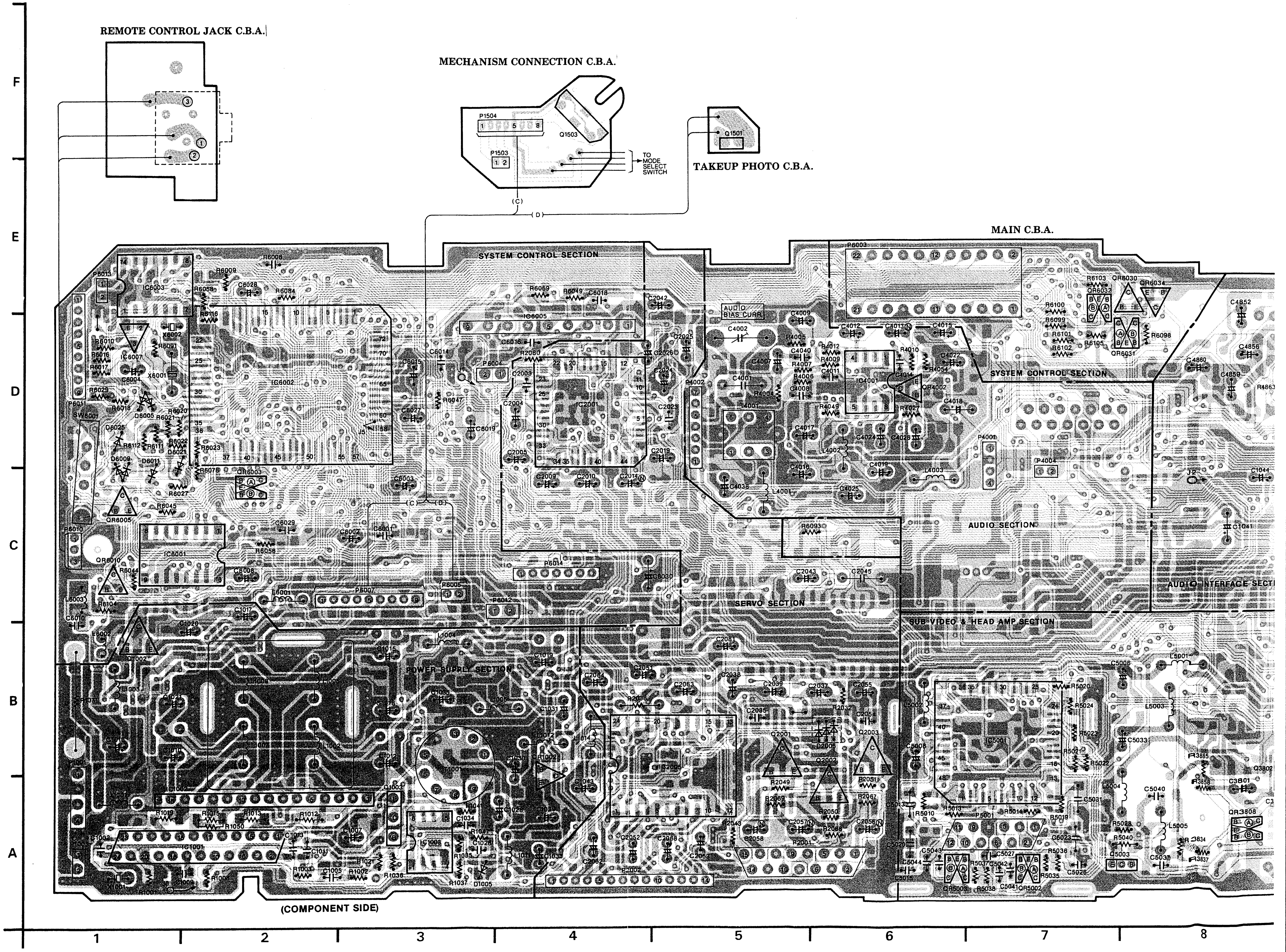
AUTO FOCUS Section

AUTO FOCUS C.B.A.	
Transistor	
Q701	A-6 Ⓕ
Q704	E-7 Ⓒ
Q705	B-8 Ⓕ
Q706	A-2 Ⓕ
Q707	B-8 Ⓕ
Q708	C-7 Ⓕ
Q771	E-8 Ⓒ
Integrated Circuit	
IC701	F-6 Ⓒ
IC702	F-3 Ⓒ
IC704	D-6 Ⓒ
IC705	B-9 Ⓕ
IC706	C-6 Ⓕ
IC771	C-9 Ⓕ
Test Point	
TP702	C-5 Ⓕ
TP702	E-5 Ⓒ
TP703	A-6 Ⓕ
TP703	D-6 Ⓒ
TP704	C-8 Ⓕ
TP704	E-8 Ⓒ
TP705	B-5 Ⓕ
TP705	F-5 Ⓒ
TP709	C-5 Ⓕ
TP709	E-5 Ⓒ
TP710	A-2 Ⓕ
TP710	F-2 Ⓒ
Adjustment	
C703	B-7 Ⓕ
C737	C-2 Ⓕ
VR701	E-1 Ⓒ
VR703	B-9 Ⓕ
Connector	
B701	A-7 Ⓕ
B701	F-7 Ⓒ
FP701	A-5 Ⓕ
FP701	F-5 Ⓒ
P702	C-7 Ⓕ
P702	D-7 Ⓒ
P704	D-8 Ⓒ
P704	D-8 Ⓕ
P705	D-5 Ⓒ
P705	D-5 Ⓕ
P706	C-5 Ⓕ
P706	E-5 Ⓒ
P707	A-8 Ⓕ
P707	F-8 Ⓒ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

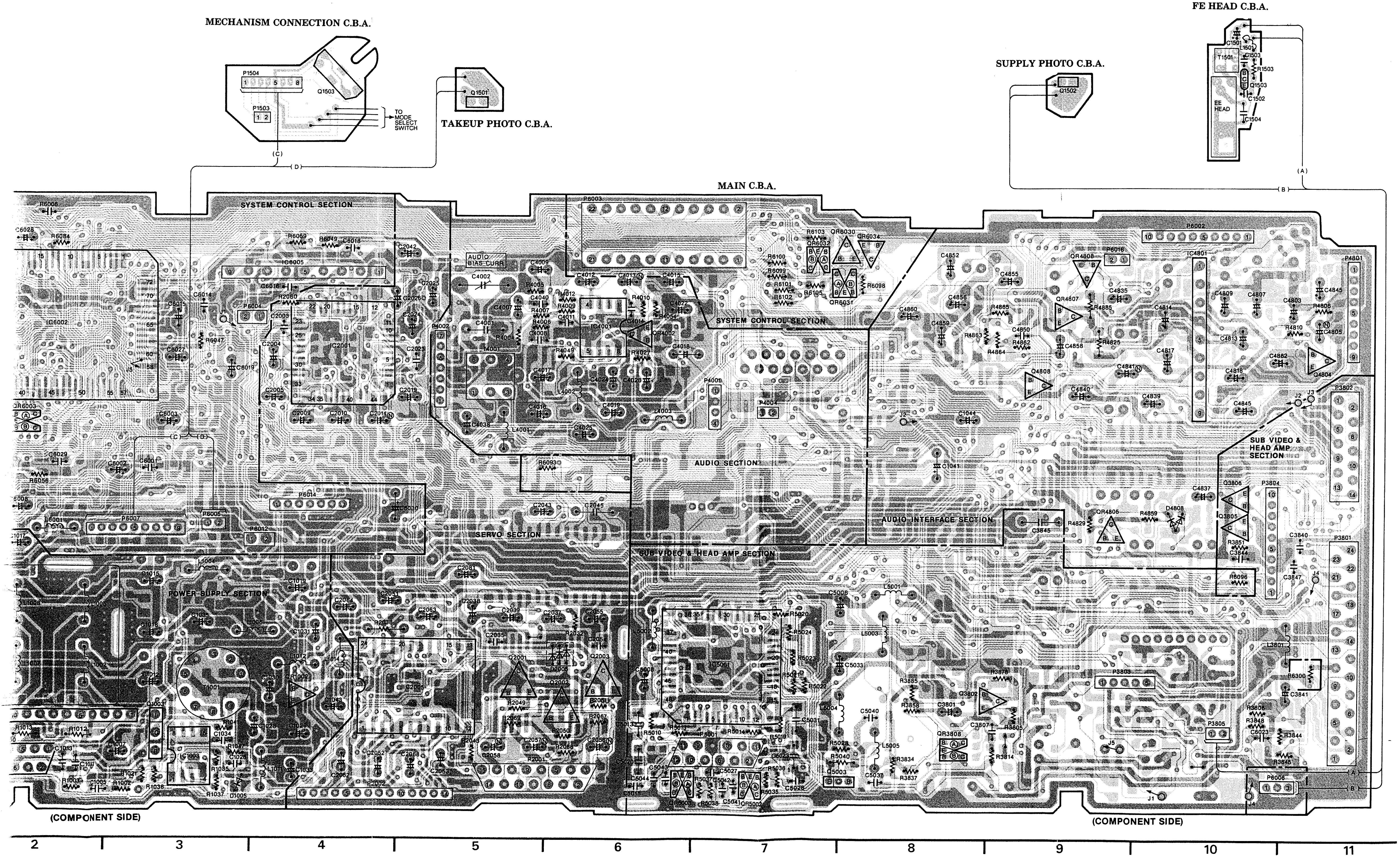
Next Page:
MAIN C.B.A. Section

3-18. MAIN C.B.A. & VTR OPERATION C.B.A.

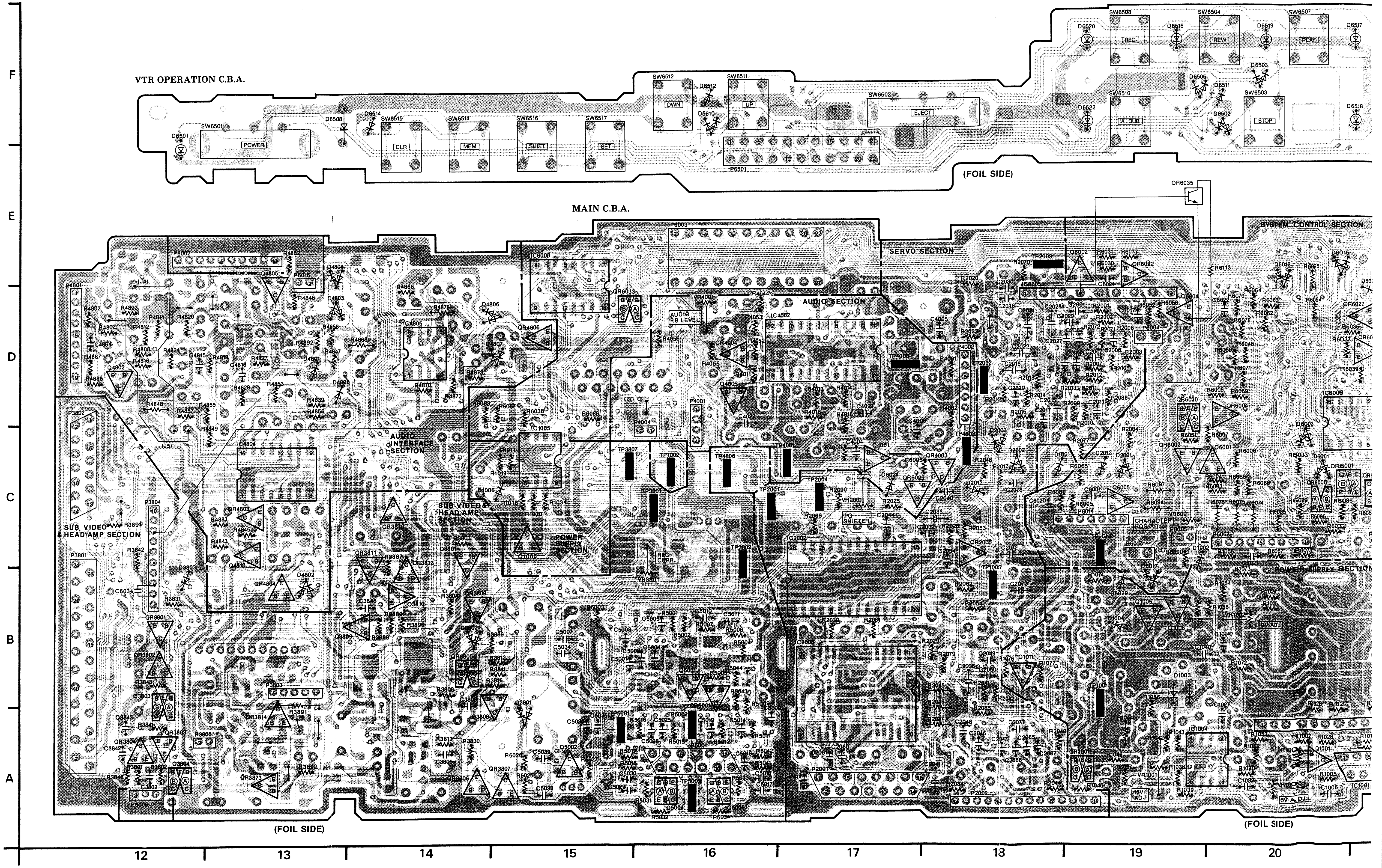

REMOTE CONTROL JACK C.B.A.
MECHANISM CONNECTION C.B.A.
P1504
Q1503
P1503
TO MODE SELECT SWITCH
Q1501
TAKEUP PHOTO C.B.A.
(C)
(D)
MAIN C.B.A.
SYSTEM CONTROL SECTION
IC6002
IC6003
IC6005
IC2001
IC6001
IC4001
AUDIO BIAS CURR.
SYSTEM CONTROL SECTION
AUDIO SECTION
AUDIO INTERFACE SECTI
SERVO SECTION
SUB VIDEO & HEAD AMP SECTION
POWER SUPPLY SECTION
IC1001
IC5001
(COMPONENT SIDE)
F
E
D
C
B
A
1
2
3
4
5
6
7
8

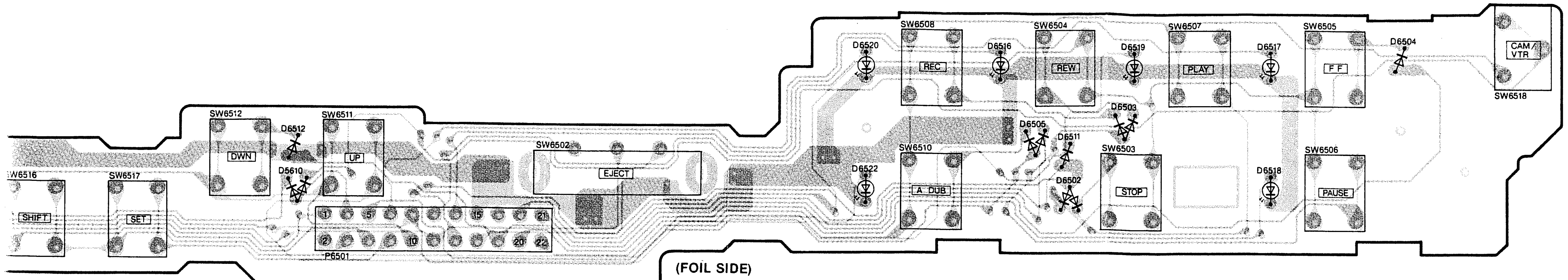
TR OPERATION C.B.A.

C.B.A.


MECHANISM CONNECTION C.B.A.
P1504
Q1503
P1503
TO MODE SELECT SWITCH
TAKEUP PHOTO C.B.A.
Q1501
SUPPLY PHOTO C.B.A.
Q1502
FE HEAD C.B.A.
T1501
L1501
C1501
C1503
R1503
Q1503
C1502
C1504
EE HEAD
(A)
(B)
(C)
(D)
MAIN C.B.A.
SYSTEM CONTROL SECTION
AUDIO BIAS CURR
AUDIO SECTION
AUDIO INTERFACE SECTION
SERVO SECTION
SUB VIDEO & HEAD AMP SECTION
POWER SUPPLY SECTION
IC6002
IC2001
IC4001
IC4801
P6003
P6002
P4801
P3802
P3801
P3804
P3803
P3805
P6006
P6014
P6007
P6005
P6012
P6004
P4001
P4004
P4002
J1
J2
J3
J4
J5
(COMPONENT SIDE)
(COMPONENT SIDE)
2
3
4
5
6
7
8
9
10
11

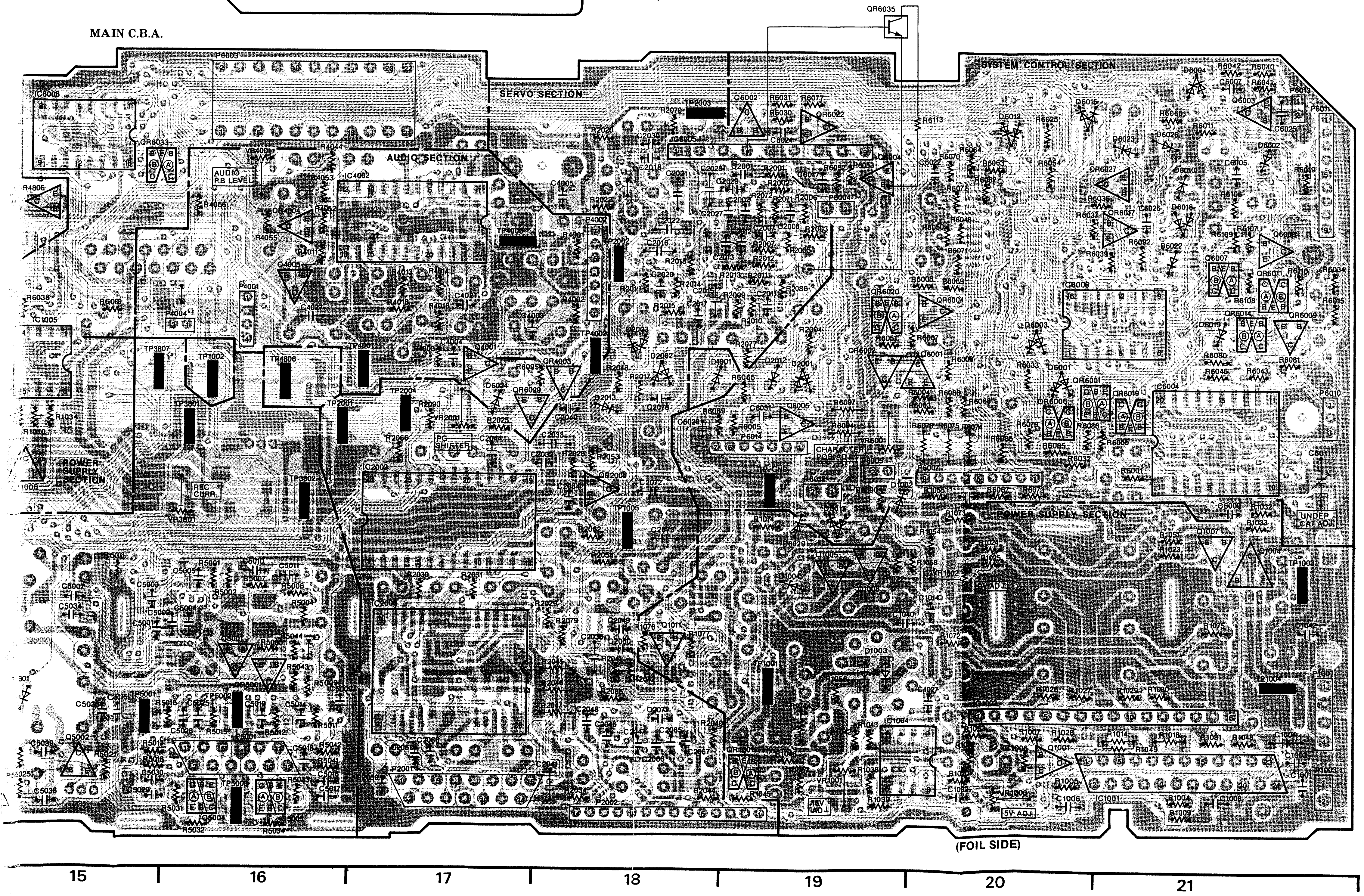
3-18. MAIN C.B.A. & VTR OPERATION C.B.A.


VTR OPERATION C.B.A.
POWER
CLR
MEM
SHIFT
SET
DWN
UP
EJECT
REC
REW
PLAY
A.DUB
STOP
(FOIL SIDE)
MAIN C.B.A.
SERVO SECTION
AUDIO SECTION
SYSTEM CONTROL SECTION
AUDIO INTERFACE SECTION
SUB VIDEO & HEAD AMP SECTION
POWER SUPPLY SECTION
CHARACTER POS ADJ
PG SHIFTER
REC CURR.
AUDIO P.B LEVEL
16V ADJ
5V ADJ
(FOIL SIDE)
F
E
D
C
B
A
12
13
14
15
16
17
18
19
20


SW6516
SHIFT
SW6517
SET
SW6512
DWN
D6512
SW6511
UP
D5610
SW6502
EJECT
P6501
SW6508
D6520
REC
D6516
SW6504
REW
D6519
SW6507
PLAY
D6517
SW6505
F F
D6504
CAM/VTR
SW6518
D6503
D6505
D6511
SW6510
D6522
A. DUB
D6502
SW6503
STOP
D6518
SW6506
PAUSE

(FOIL SIDE)

MAIN C.B.A.


QR6035
P6003
IC6008
QR6033
SERVO SECTION
AUDIO SECTION
SYSTEM CONTROL SECTION
AUDIO P.B LEVEL
VR4001
IC4002
TP4006
TP2003
Q6002
IC6006
IC6004
POWER SUPPLY SECTION
TP3807
TP1002
TP4806
TP3801
TP2001
TP2004
PG SHIFTER
REC CURR.
VR3801
TP3802
IC2002
CHARACTER POS ADJ.
UNDER CAT ADJ.
IC1005
TP5001
TP5002
TP5003
IC1001
IC1004
P1001
P2001
P2002
TP1005
TP1003
9V ADJ.
5V ADJ.
VR1002
VR1001
15
16
17
18
19
20
21

(FOIL SIDE)

POWER SUPPLY Section on MAIN C.B.A.	
Transistor	
Q1001	A-20 Ⓕ
Q1002	B-1 Ⓒ
Q1003	A-3 Ⓒ
Q1004	B-21 Ⓕ
Q1005	B-19 Ⓕ
Q1006	C-15 Ⓕ
Q1007	B-21 Ⓕ
Q1008	B-19 Ⓕ
Q1011	B-18 Ⓕ
Transistor & Resistor	
QR1001	A-19 Ⓕ
QR1002	B-4 Ⓒ
Integrated Circuit	
IC1001	A-2 Ⓒ
IC1001	A-21 Ⓕ
IC1002	A-2 Ⓒ
IC1002	A-20 Ⓕ
IC1003	A-3 Ⓒ
IC1004	A-19 Ⓕ
IC1005	C-15 Ⓕ
Test Point	
TP1001	B-19 Ⓕ
TP1002	C-16 Ⓕ
TP1003	B-21 Ⓕ
TP1004	B-21 Ⓕ
TP1005	B-18 Ⓕ
Adjustment	
VR1001	A-19 Ⓕ
VR1002	B-20 Ⓕ
VR1003	A-20 Ⓕ
Connector	
P1001	B-1 Ⓒ
P1001	B-21 Ⓕ
P1003	A-1 Ⓒ
P1003	A-21 Ⓕ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

SERVO Section on MAIN C.B.A.	
Transistor	
Q2001	B-5 Ⓒ
Q2002	B-6 Ⓒ
Q2003	B-6 Ⓒ
Transistor & Resistor	
QR2005	C-18 Ⓕ
Integrated Circuit	
IC2001	D-4 Ⓒ
IC2002	C-17 Ⓕ
IC2005	B-5 Ⓒ
IC2006	B-17 Ⓕ
Test Point	
TP2001	C-16 Ⓕ
TP2002	D-18 Ⓕ
TP2003	E-18 Ⓕ
TP2004	C-17 Ⓕ
TP GND	C-19 Ⓕ
Adjustment	
VR2001	C-17 Ⓕ
Connector	
P2001	A-17 Ⓕ
P2001	A-5 Ⓒ
P2002	A-18 Ⓕ
P2002	A-4 Ⓒ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

SYSTEM CONTROL Section on MAIN C.B.A.	
Transistor	
Q1501	F-5
Q1502	F-9
Q1503	F-4
Q6001	C-20 Ⓕ
Q6002	E-19 Ⓕ
Q6003	E-21 Ⓕ
Q6004	D-19 Ⓕ
Q6005	C-19 Ⓕ
Q6006	D-21 Ⓕ
Q6007	D-21 Ⓕ
Transistor & Resistor	
QR6001	C-20 Ⓕ
QR6002	C-19 Ⓕ
QR6003	C-2 Ⓒ
QR6004	D-20 Ⓕ
QR6005	C-1 Ⓒ
QR6006	C-20 Ⓕ
QR6009	D-21 Ⓕ
QR6010	C-1 Ⓒ
QR6011	D-21 Ⓕ
QR6014	D-21 Ⓕ
QR6017	D-21 Ⓕ
QR6019	C-21 Ⓕ
QR6020	D-19 Ⓕ
QR6022	E-19 Ⓕ
QR6027	D-21 Ⓕ
QR6029	C-17 Ⓕ
QR6030	E-8 Ⓒ
QR6031	D-8 Ⓒ
QR6032	E-7 Ⓒ
QR6033	D-15 Ⓕ
QR6034	E-8 Ⓒ
QR6035	E-19 Ⓕ
Integrated Circuit	
IC6001	C-2 Ⓒ
IC6002	D-2 Ⓒ
IC6003	E-1 Ⓒ
IC6004	C-21 Ⓕ
IC6005	D-18 Ⓕ
IC6005	D-4 Ⓒ
IC6006	C-20 Ⓕ
IC6006	D-20 Ⓕ
IC6007	D-1 Ⓒ
IC6008	E-15 Ⓕ
Adjustment	
C6011	C-21 Ⓕ
VR6001	C-19 Ⓕ
Connector	
P1503	E-4
P1504	F-4
P6002	E-10 Ⓒ
P6002	E-12 Ⓕ
P6003	E-6 Ⓒ
P6003	F-16 Ⓕ
P6004	D-19 Ⓕ
P6004	D-4 Ⓒ
P6005	C-19 Ⓕ
P6005	C-3 Ⓒ
P6006	A-10 Ⓒ
P6006	A-12 Ⓕ
P6007	C-20 Ⓕ
P6007	C-3 Ⓒ
P6010	C-1 Ⓒ
P6010	C-21 Ⓕ
P6011	D-1 Ⓒ
P6011	E-21 Ⓕ
P6012	C-19 Ⓕ
P6012	C-4 Ⓒ
P6013	E-1 Ⓒ
P6013	E-21 Ⓕ
P6014	C-19 Ⓕ
P6014	C-4 Ⓒ
P6016	E-13 Ⓕ
P6016	E-9 Ⓒ
P6501	E-16

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

SUB VIDEO & HEAD AMP Section on MAIN C.B.A.	
Transistor	
Q3801	C-14 Ⓕ
Q3802	B-8 Ⓒ
Q3803	B-12 Ⓕ
Q3804	A-12 Ⓕ
Q3805	C-10 Ⓒ
Q3806	C-10 Ⓒ
Q3808	A-15 Ⓕ
Q5001	B-16 Ⓕ
Q5002	A-15 Ⓕ
Q5003	A-8 Ⓒ
Q5004	A-16 Ⓕ
Q5005	A-16 Ⓕ
Transistor & Resistor	
QR3801	B-12 Ⓕ
QR3802	B-12 Ⓕ
QR3803	A-12 Ⓕ
QR3804	A-12 Ⓕ
QR3805	B-14 Ⓕ
QR3806	A-14 Ⓕ
QR3807	A-15 Ⓕ
QR3808	A-8 Ⓒ
QR3809	B-14 Ⓕ
QR5001	B-16 Ⓕ
QR5002	A-7 Ⓒ
QR5003	A-6 Ⓒ
Integrated Circuit	
IC5001	B-7 Ⓒ
Test Point	
TP3801	C-16 Ⓕ
TP3802	C-16 Ⓕ
TP3807	C-16 Ⓕ
TP5001	A-15 Ⓕ
TP5002	A-16 Ⓕ
TP5003	A-16 Ⓕ
Connector	
P3801	C-12 Ⓕ
P3801	C-11 Ⓒ
P3802	D-11 Ⓒ
P3802	D-12 Ⓕ
P3803	B-13 Ⓕ
P3803	B-9 Ⓒ
P3804	C-10 Ⓒ
P3804	C-12 Ⓕ
P3805	A-10 Ⓒ
P3805	A-12 Ⓕ
P5001	A-16 Ⓕ
P5001	A-7 Ⓒ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

AUDIO INTERFACE Section on MAIN C.B.A.	
Transistor	
Q4802	D-12 Ⓕ
Q4804	D-11 Ⓒ
Q4805	E-13 Ⓕ
Q4807	D-8 Ⓒ
Q4808	D-9 Ⓒ
Q4810	C-13 Ⓕ
Transistor & Resistor	
QR4803	C-13 Ⓕ
QR4804	B-13 Ⓕ
QR4805	C-9 Ⓒ
QR4806	D-15 Ⓕ
QR4807	D-9 Ⓒ
QR4808	E-9 Ⓒ
Integrated Circuit	
IC4801	D-10 Ⓒ
IC4804	C-13 Ⓕ
IC4805	D-14 Ⓕ
Test Point	
TP4806	C-16 Ⓕ
Connector	
P4801	D-11 Ⓒ
P4801	D-12 Ⓕ

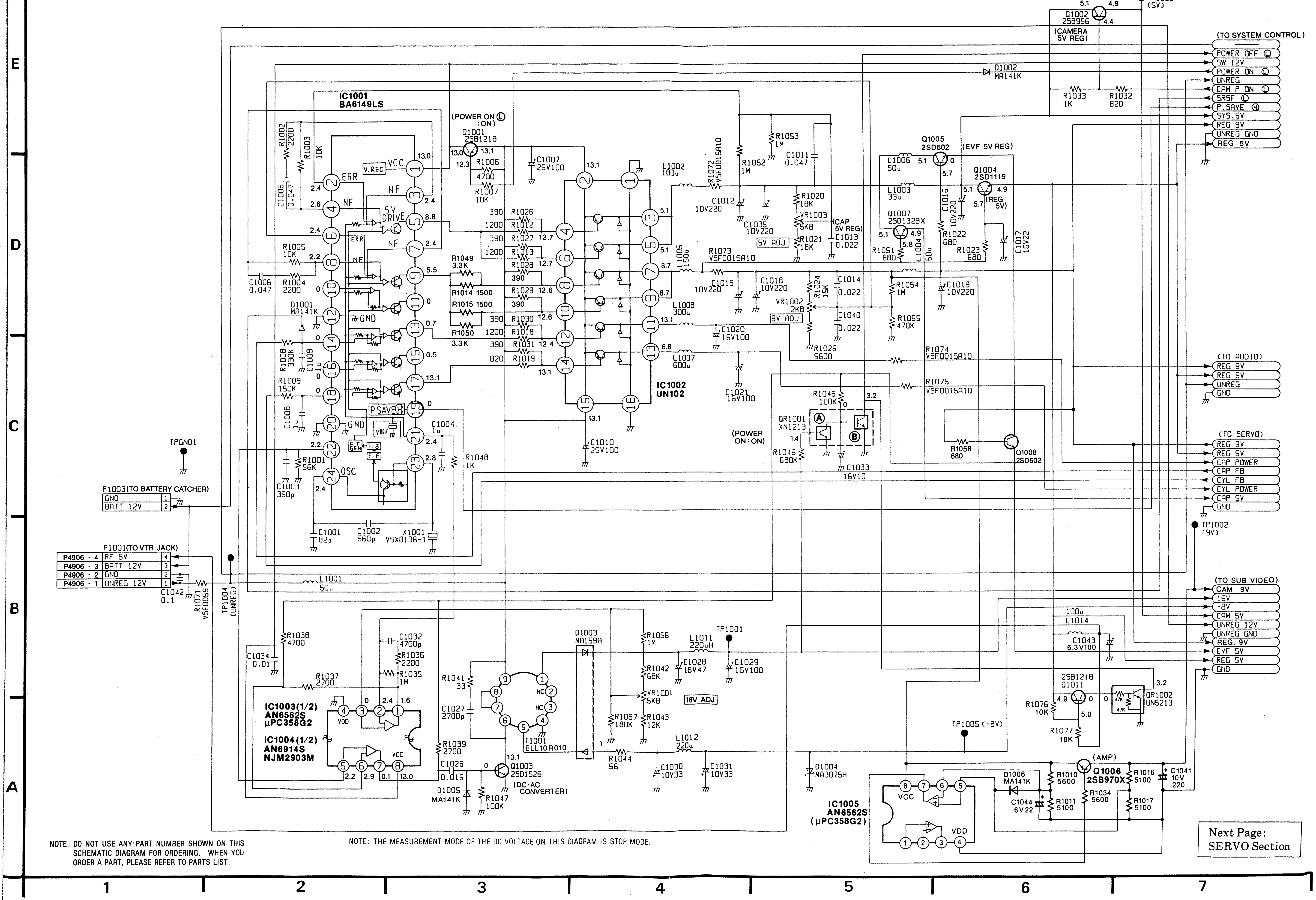
ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

AUDIO Section on MAIN C.B.A.	
Transistor	
Q1504	F-10
Q4001	C-17 Ⓕ
Q4005	D-16 Ⓕ
Transistor & Resistor	
QR4002	D-6 Ⓒ
QR4003	C-18 Ⓕ
QR4004	D-16 Ⓕ
Integrated Circuit	
IC4001	D-6 Ⓒ
IC4002	D-17 Ⓕ
Test Point	
TP4001	C-17 Ⓕ
TP4002	C-18 Ⓕ
TP4003	D-17 Ⓕ
Adjustment	
C4002	D-5 Ⓒ
VR4001	D-16 Ⓕ
Connector	
P4001	D-16 Ⓕ
P4001	D-7 Ⓒ
P4002	D-18 Ⓕ
P4002	D-5 Ⓒ
P4004	C-16 Ⓕ
P4004	C-7 Ⓒ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

3-19. POWER SUPPLY SCHEMATIC DIAGRAM

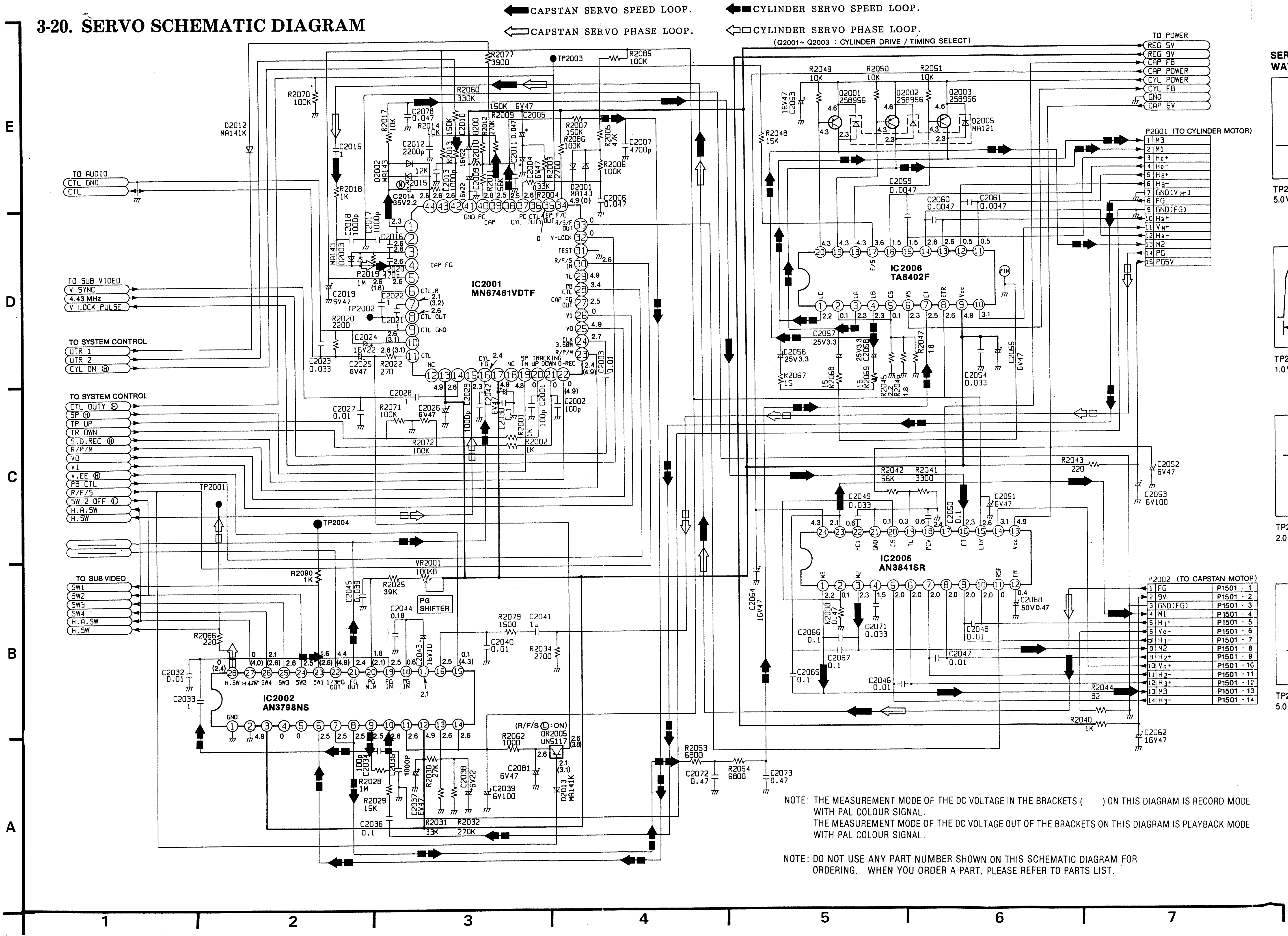

IC1001
BA6149LS
IC1002
UN102
IC1003(1/2)
AN6562S
µPC358G2
IC1004(1/2)
AN6914S
NJM2903M
IC1005
AN6562S
(µPC358G2)
Q1001
2SB1218
(POWER ON Ⓛ :ON)
Q1002
2SB956
(CAMERA 5V REG)
Q1003
2SD1526
(DC-AC CONVERTER)
Q1004
2SD1119
(REG 5V)
Q1005
2SD602
(EVF 5V REG)
Q1006
2SB970X
(AMP)
Q1007
2SD1328X
Q1008
2SD602
Q1011
2SB1218
QR1001
XN1213
QR1002
UN5213
D1001
MA141K
D1002
MA141K
D1003
MA159A
D1004
MA3075H
D1005
MA141K
D1006
MA141K
T1001
ELL10R010
X1001
VSX0136-1
TP1001
TP1002 (9V)
TP1003 (5V)
TP1004 (UNREG)
TP1005 (-8V)
TPGND1
5V ADJ
9V ADJ
16V ADJ
(CAP 5V REG)
(POWER ON : ON)
P1003(TO BATTERY CATCHER)
GND
BATT 12V
P1001(TO VTR JACK)
P4906 - 4 RF 5V
P4906 - 3 BATT 12V
P4906 - 2 GND
P4906 - 1 UNREG 12V
(TO SYSTEM CONTROL)
POWER OFF Ⓛ
SW 12V
POWER ON Ⓛ
UNREG
CAM P ON Ⓛ
SRSF Ⓛ
P.SAVE Ⓗ
SYS.5V
REG 9V
UNREG GND
REG 5V
(TO AUDIO)
REG 9V
REG 5V
UNREG
GND
(TO SERVO)
REG 9V
REG 5V
CAP POWER
CAP FB
CYL FB
CYL POWER
CAP 5V
GND
(TO SUB VIDEO)
CAM 9V
16V
-8V
CAM 5V
UNREG 12V
UNREG GND
REG. 9V
EVF 5V
REG 5V
GND
E
D
C
B
A
1
2
3
4
5
6
7

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

Next Page:
SERVO Section

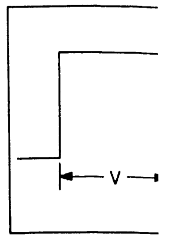
3-20. SERVO SCHEMATIC DIAGRAM

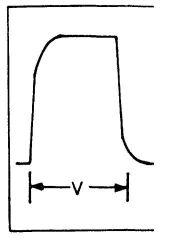

CAPSTAN SERVO SPEED LOOP.
CAPSTAN SERVO PHASE LOOP.
CYLINDER SERVO SPEED LOOP.
CYLINDER SERVO PHASE LOOP.
(Q2001~ Q2003 : CYLINDER DRIVE / TIMING SELECT)
E
D
C
B
A
1
2
3
4
5
6
7
IC2001
MN67461VDTF
IC2002
AN3798NS
IC2005
AN3841SR
IC2006
TA8402F
TO AUDIO
CTL GND
CTL
TO SUB VIDEO
V SYNC
4.43 MHz
V LOCK PULSE
TO SYSTEM CONTROL
UTR 1
UTR 2
CYL ON Ⓗ
TO SYSTEM CONTROL
CTL DUTY Ⓗ
SP Ⓗ
TP UP
TR DWN
S.D.REC Ⓗ
R/P/M
VO
VI
V.EE Ⓗ
PB CTL
R/F/S
SW 2 OFF Ⓛ
H.A.SW
H.SW
TO SUB VIDEO
SW1
SW2
SW3
SW4
H.A.SW
H.SW
TO POWER
REG 5V
REG 9V
CAP FB
CAP POWER
CYL POWER
CYL FB
GND
CAP 5V
P2001 (TO CYLINDER MOTOR)
1 M3
2 M1
3 Hc+
4 Hc-
5 HB+
6 HB-
7 GND(VM-)
8 FG
9 GND(FG)
10 Ha+
11 VM+
12 Ha-
13 M2
14 PG
15 PG5V
P2002 (TO CAPSTAN MOTOR)
1 FG P1501 - 1
2 9V P1501 - 2
3 GND(FG) P1501 - 3
4 M1 P1501 - 4
5 H1+ P1501 - 5
6 Vc- P1501 - 6
7 H1- P1501 - 7
8 M2 P1501 - 8
9 H2+ P1501 - 9
10 Vc+ P1501 - 10
11 H2- P1501 - 11
12 H3+ P1501 - 12
13 M3 P1501 - 13
14 H3- P1501 - 14
TP2001
TP2002
TP2003
TP2004
Q2001 2SB956
Q2002 2SB956
Q2003 2SB956
D2005 MA121
D2012 MA141K
D2013 MA141K
D2001 MA143
D2002 MA143
D2003 MA143
Q2005 UN5117
(R/F/S Ⓛ:ON)
VR2001 100KB
PG SHIFTER
R2077 3900
R2085 100K
R2060 330K
R2070 100K
R2049 10K
R2050 10K
R2051 10K
R2048 15K
R2043 220
R2042 56K
R2041 3300
R2044 82
R2040 1K
R2053 6800
R2054 6800
R2090 1K
R2025 39K
R2079 1500
R2034 2700
R2062 1000
R2028 1M
R2029 15K
R2031 33K
R2032 270K
R2066 220
R2071 100K
R2072 100K
R2022 270
R2020 2200
R2019 470
R2018 1K
R2017 10K
R2014 10K
R2007 150K
R2086 100K
R2005 47K
R2006 100K
R2067 15
C2041 1μ
C2040 0.01
C2044 0.18
C2072 0.47
C2073 0.47
C2064 16V47
C2062 16V47
C2052 6V47
C2053 6V100
C2068 50V0.47
C2059 0.0047
C2060 0.0047
C2061 0.0047
C2054 0.033
C2055 6V47
C2056 25V3.3
C2057 25V3.3
C2063 16V47
C2007 4700p
C2006 0.047
C2078 0.047
C2012 2200p
C2015 1
C2023 0.033
C2025 6V47
C2027 0.01
C2026 6V47
C2002 100p
C2032 0.01
C2033 1
C2036 0.1
C2039 6V100
C2081 6V47
C2049 0.033
C2051 6V47
C2066 0.1
C2067 0.1
C2065 0.1
C2071 0.033
C2046 0.01
C2047 0.01
C2048 0.01
CAP FG
CTL GND
CTL OUT
CTL
TEST
V-LOCK
GND PC CAP
PC CTL CYL DUTY
EP F/C OUT
R/S/F OUT
R/F/S IN
TL
PB CTL
CAP FG OUT
VI
VO
CLK 3.58M
R/P/M
D-REC
CYL FG
SP TRACKING IN UP DOWN
NC
H.SW H.A.SW SW4 SW3 SW2 SW1 1/3PG OUT FG OUT PG M.M FG IN PG IN
GND
LC LA LB CS VS ET ETR Vcc
F/S
FIN
PC1 GND CS TL PCV ET ETR Vcc
M3 M2 RSF ER

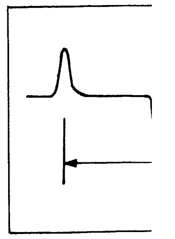
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

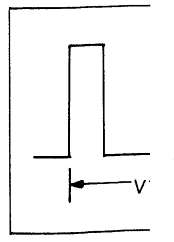
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SERVO CIRCU
WAVEFORM (


TP2001 PLAY/I
5.0V/10msec. di

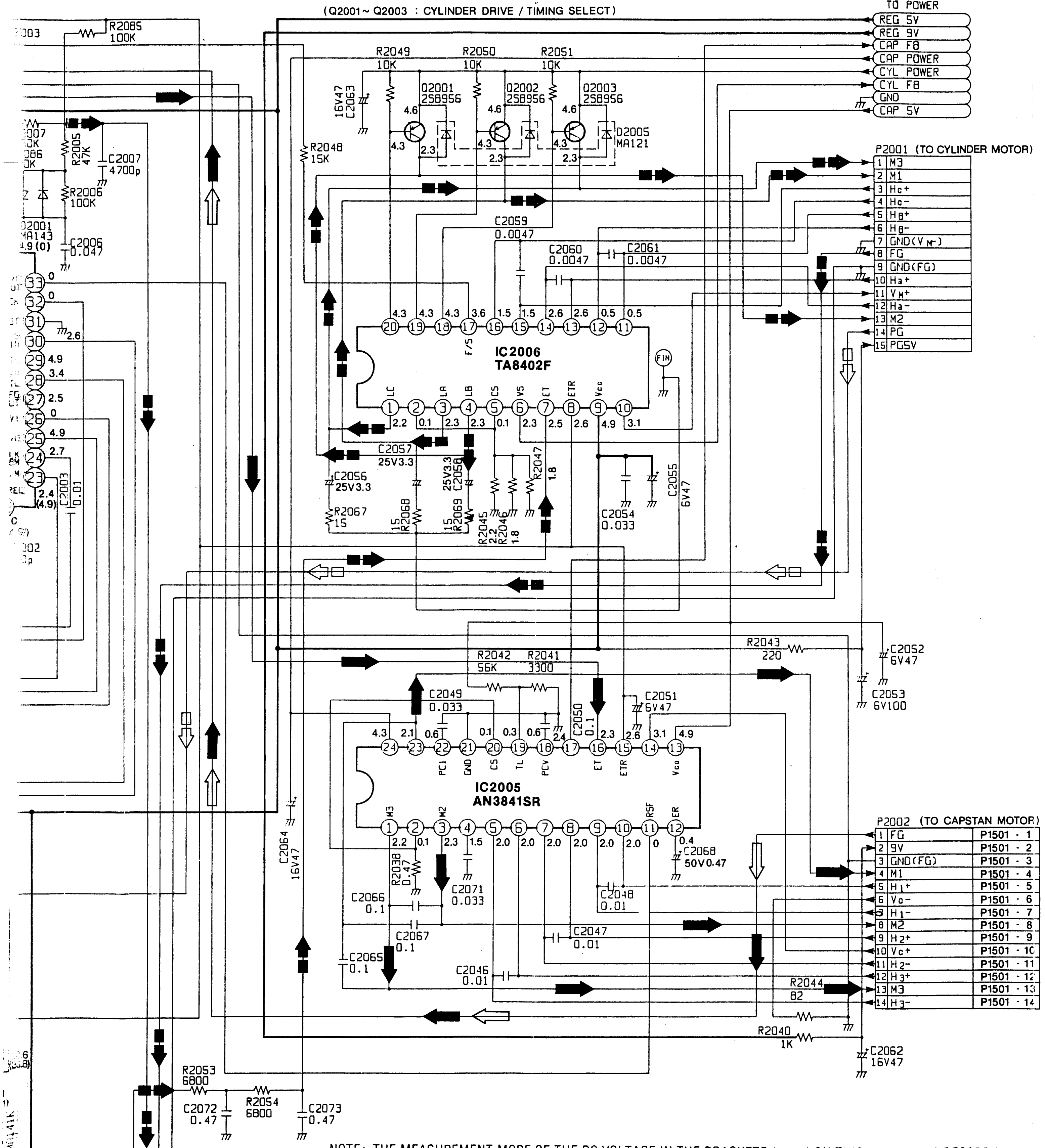

TP2002 REC
1.0V/10msec. di


TP2002 PLAY
2.0V/10msec. d


TP2004 PLAY
5.0V/20msec. d

N SERVO SPEED LOOP. ◀■CYLINDER SERVO SPEED LOOP.

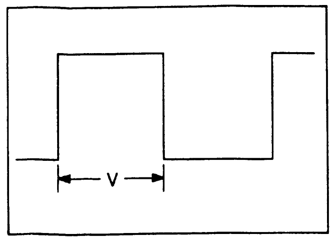
.N SERVO PHASE LOOP. ◁□CYLINDER SERVO PHASE LOOP.


(Q2001~ Q2003 : CYLINDER DRIVE / TIMING SELECT)
TO POWER
REG 5V
REG 9V
CAP FG
CAP POWER
CYL POWER
CYL FG
GND
CAP 5V
P2001 (TO CYLINDER MOTOR)
1 M3
2 M1
3 Hc+
4 Hc-
5 HB+
6 HB-
7 GND(VM-)
8 FG
9 GND(FG)
10 Ha+
11 VM+
12 Ha-
13 M2
14 PG
15 PG5V
R2049 10K
R2050 10K
R2051 10K
Q2001 2SB956
Q2002 2SB956
Q2003 2SB956
D2005 MA121
R2048 15K
16V47 C2063
C2059 0.0047
C2060 0.0047
C2061 0.0047
IC2006 TA8402F
C2057 25V3.3
C2056 25V3.3
R2067 15
R2068 15
R2069 15
R2045 R2046
R2047 1.8
C2054 0.033
C2055 6V47
R2085 100K
R2005 47K
C2007 4700p
R2006 100K
C2006 0.047
C2003 0.01
R2043 220
C2052 6V47
C2053 6V100
R2042 56K
R2041 3300
C2049 0.033
C2050 0.1
C2051 6V47
IC2005 AN3841SR
C2064 16V47
R2038 0.47
C2066 0.1
C2071 0.033
C2067 0.1
C2065 0.1
C2068 50V0.47
C2048 0.01
C2047 0.01
C2046 0.01
R2044 82
R2040 1K
C2062 16V47
P2002 (TO CAPSTAN MOTOR)
1 FG P1501 - 1
2 9V P1501 - 2
3 GND(FG) P1501 - 3
4 M1 P1501 - 4
5 H1+ P1501 - 5
6 Vc- P1501 - 6
7 H1- P1501 - 7
8 M2 P1501 - 8
9 H2+ P1501 - 9
10 Vc+ P1501 - 10
11 H2- P1501 - 11
12 H3+ P1501 - 12
13 M3 P1501 - 13
14 H3- P1501 - 14
R2053 6800
R2054 6800
C2072 0.47
C2073 0.47

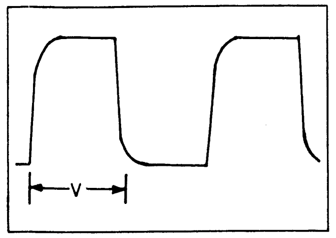
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

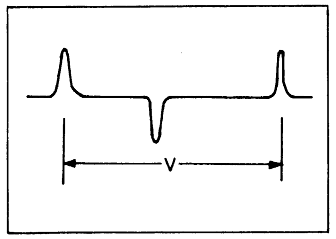
SERVO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 2000 Series)



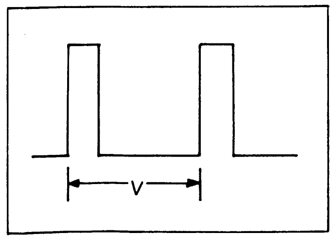
TP2001 PLAY/REC
5.0V/10msec. div. 5.0Vp-p



TP2002 REC
1.0V/10msec. div. 5.0Vp-p



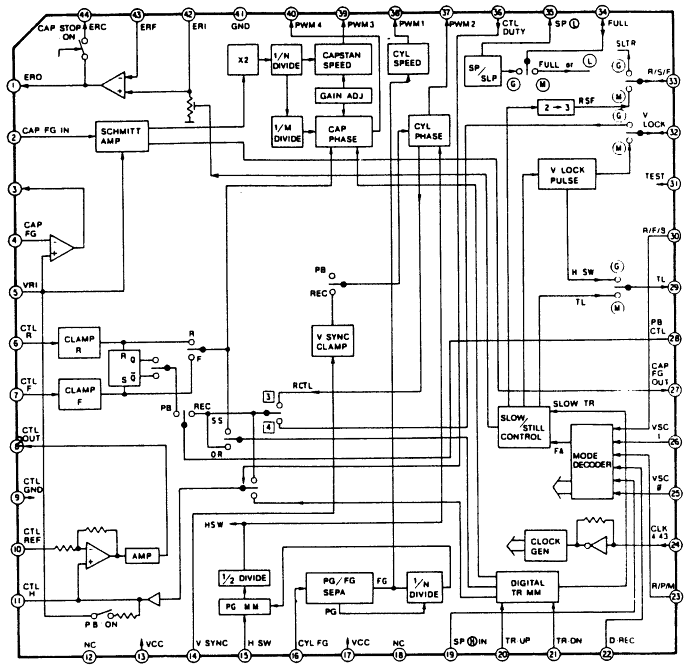
TP2002 PLAY
2.0V/10msec. div. 4.8Vp-p



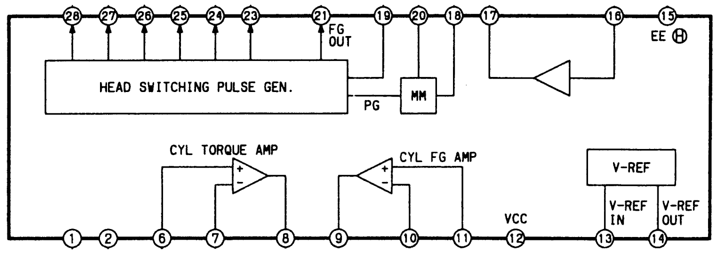
TP2004 PLAY/REC
5.0V/20msec. div. 5.0Vp-p

IC BLOCK

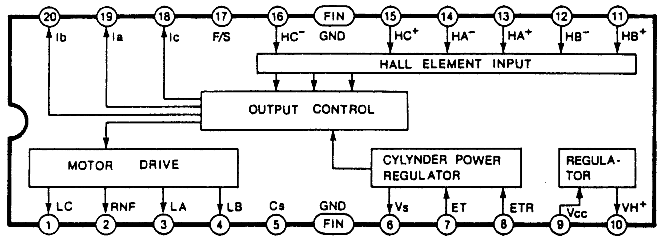
IC2001 (MN67461VDJF)


CAP STOP ERC ON
ERF
ERI
GND
PWM4
PWM3
PWM1
PWM2
CTL DUTY
SP
FULL
ERO
CAP FG IN
SCHMITT AMP
X2
1/N DIVIDE
CAPSTAN SPEED
GAIN ADJ
CYL SPEED
1/M DIVIDE
CAP PHASE
CYL PHASE
SP SLP
V LOCK PULSE
CAP FG
VRI
CTL R
CLAMP R
CLAMP F
CTL F
CTL OUT
CTL GND
CTL REF
CTL H
V SYNC CLAMP
RCTL
SLOW STILL CONTROL
SLOW TR
MODE DECODER
CLOCK GEN
DIGITAL TR MM
1/2 DIVIDE
PG MM
PG/FG SEPA
1/M DIVIDE
AMP
PB ON
H SW
TL
TEST
R/F/S
VSC
CLK
R/P/M
NC
VCC
V SYNC
CYL FG
SP ON
TR UP
TR DN
D REC

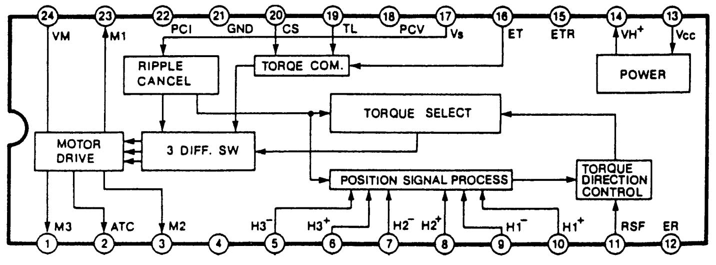
IC2002 (AN3798HS)


FG OUT
EE
HEAD SWITCHING PULSE GEN.
PG
MM
CYL TORQUE AMP
CYL FG AMP
V-REF
VCC
V-REF IN
V-REF OUT

IC2006 (TA8402)


Ib
Ia
Ic
F/S
HC-
GND
FIN
HC+
HA-
HA+
HB-
HB+
HALL ELEMENT INPUT
OUTPUT CONTROL
MOTOR DRIVE
CYLYNDER POWER REGULATOR
REGULA-TOR
LC
RNF
LA
LB
Cs
Vs
ET
ETR
Vcc
VH+

IC2006 (AN3841SR)


VM
M1
PCI
GND
CS
TL
PCV
Vs
ET
ETR
VH+
Vcc
RIPPLE CANCEL
TORQE COM.
POWER
TORQUE SELECT
MOTOR DRIVE
3 DIFF. SW
POSITION SIGNAL PROCESS
TORQUE DIRECTION CONTROL
M3
ATC
M2
H3-
H3+
H2-
H2+
H1-
H1+
RSF
ER

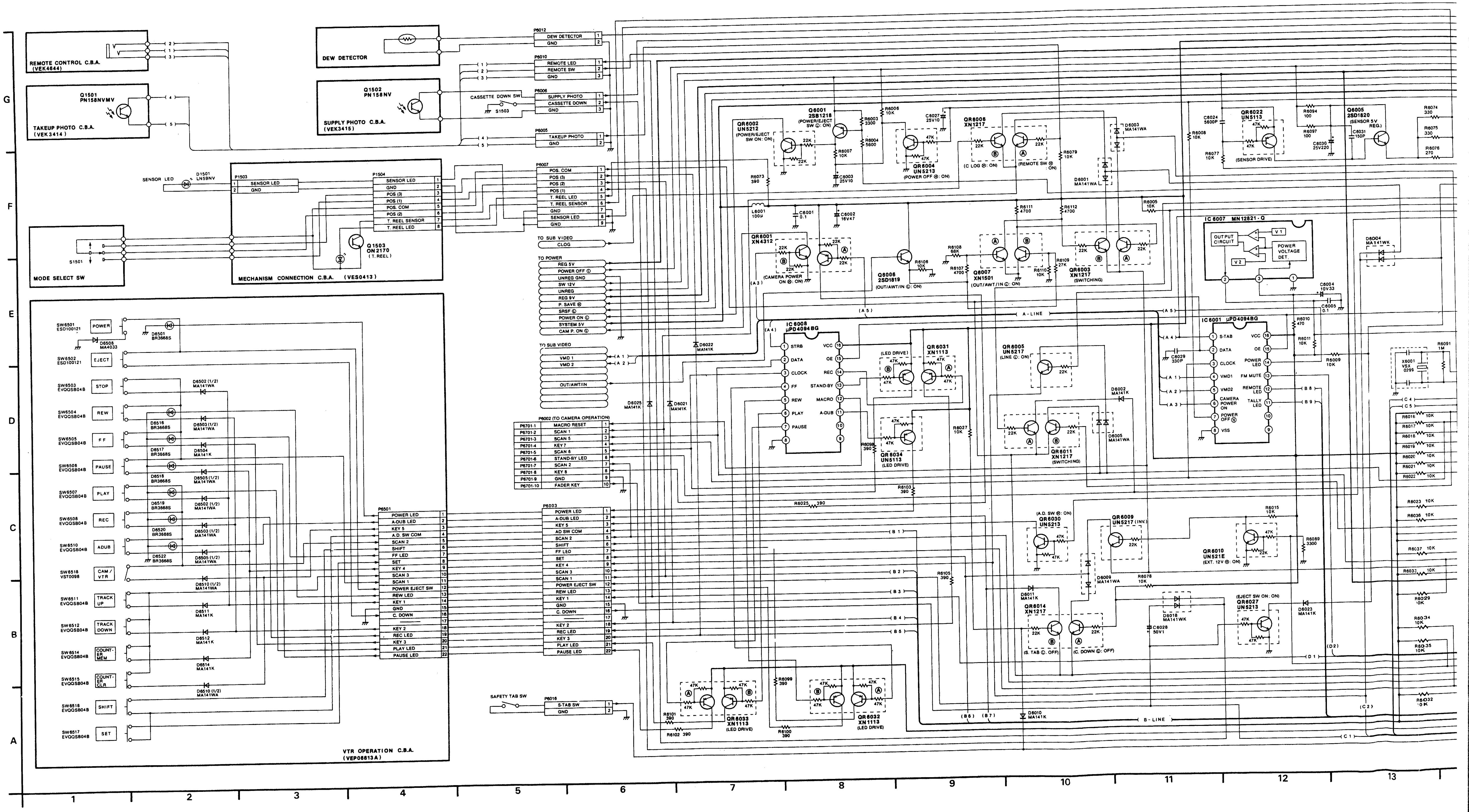
SYSTEM CONTROL ICs DC VOLTAGE CHART

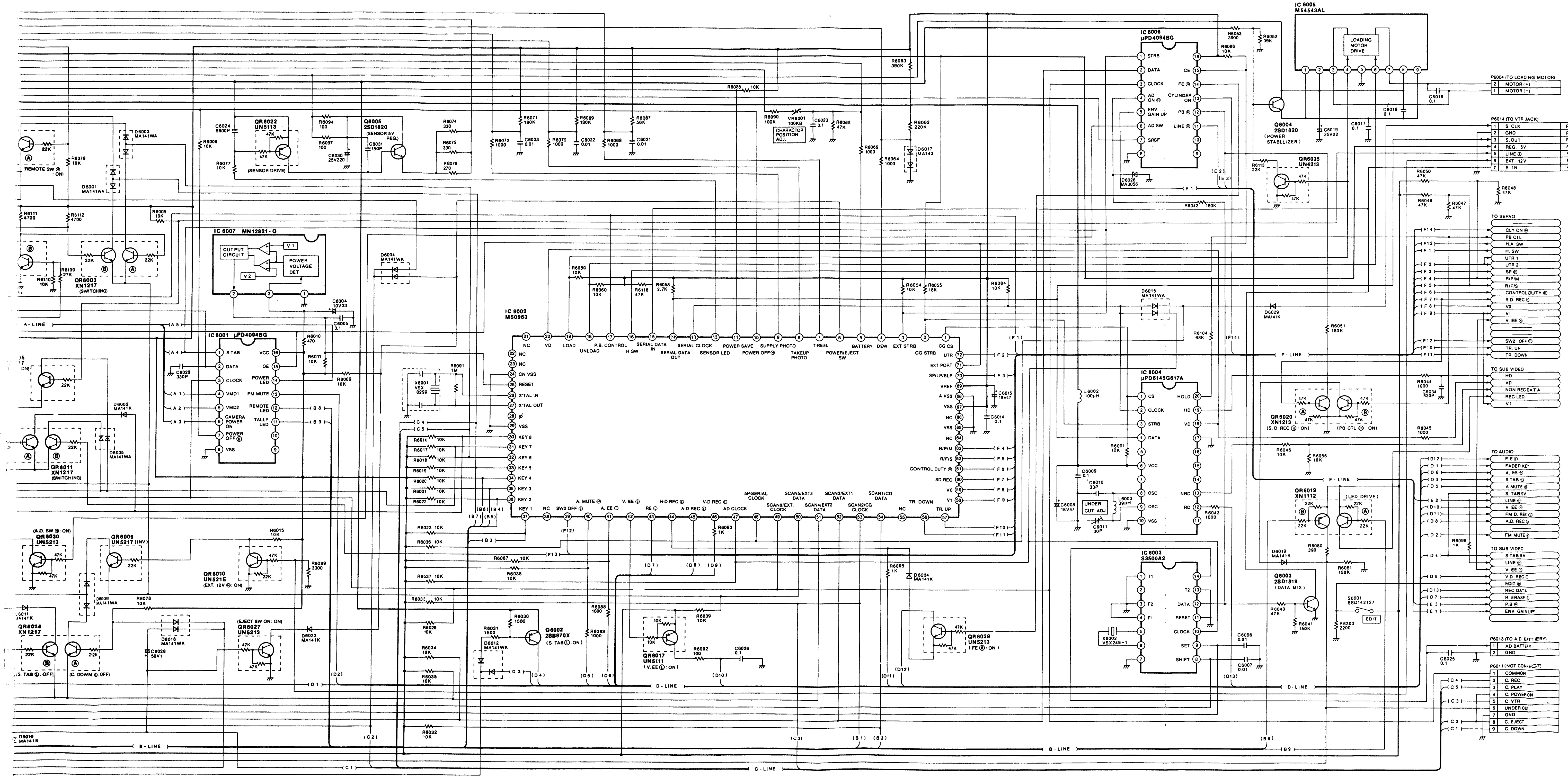
REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	4.7	4.7	0	0	4.9	4.8	0	4.8	4.3	4.9	4.9	4.9	0	4.9	4.9				
PLAY	0	0	4.7	0	0	0	4.7	0	4.8	4.3	4.9	4.9	0	0	4.9	4.9				
F.F	0	4.7	4.7	0	0	4.8	4.7	0	4.8	4.3	4.8	4.9	4.8	0	4.9	4.9				
REF. NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.0	0	0	0	3.2	4.9	4.6	4.8	4.9	0	0	8.6	4.8	3.6	3.6	0	0	0	0	0.1
PLAY	5.0	0	0	0	3.2	4.9	4.6	4.8	4.8	0	0	8.6	3.8	3.6	3.6	3.4	2.3	0	0	1.0
F.F	5.0	0	0	0	3.2	4.9	4.6	4.8	4.8	0	0	6.3	4.7	3.6	3.6	0	3.9	0	0	0.7
REF. NO.	IC6002																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	4.9	2.2	1.0	3.5	0	4.9	4.7	4.7	4.7	4.9	4.7	4.9	4.9	0	0	4.5
PLAY	0.9	0	0	0	4.9	2.1	0.9	3.5	0	4.9	4.7	4.7	4.7	4.9	4.9	4.7	4.7	0	4.7	0
F.F	0	0	0	0	4.9	2.1	1.0	3.3	0	4.9	4.7	4.7	4.7	4.9	4.7	4.9	4.9	0	4.8	4.5
REF. NO.	IC6002																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	4.3	0	8.6	4.5	8.6	5.0	4.9	4.8	4.7	4.7	4.7	4.8	4.9	4.9	0	0	0	0	4.9	0
PLAY	0	4.9	8.6	4.5	8.6	5.0	3.8	4.8	4.6	4.7	4.7	4.8	4.9	4.9	0	0	0	0	4.9	0
F.F	4.3	0	8.6	4.5	8.6	5.0	4.2	4.8	4.7	4.7	4.7	4.7	4.9	4.9	0	0	0	4.9	4.9	0
REF. NO.	IC6002																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72								
STOP	0	0	4.9	0	0	0	4.9	0	4.9	4.8	4.9	1.8								
PLAY	0	2.5	2.5	1.1	0	1.5	4.9	0	4.9	4.8	4.9	2.6								
F.F	0	2.5	4.9	0.1	0	0.1	4.9	0	4.9	2.5	4.9	2.5								
REF. NO.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0.1	0	0	0	0	0	0	0	0	0	0.3	0	0						
PLAY	0	0.2	0	0	0	0	0	0	0	0	0	0.3	0	0						
F.F	0	0	0	0	0	0.4	0	0.7	0.6	0.3	0	0.4	0	0.3						
REF. NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.0	4.8	0	3.7	0	5.0	1.9	2.4	2.4	0	0	0	0	0	0	0	0	0.1	0.1	5.0
PLAY	5.0	3.8	0	3.7	0	5.0	1.9	2.4	2.4	0	0	0	0	0	0	0	0	0.1	0.1	5.0
F.F	0	4.8	0	3.7	0	5.0	1.9	2.4	2.4	0	0	0	0	0	0	0	0	0	0	5.0
REF. NO.	IC6005																			
MODE	1	2	3	4	5	6	7	8	9											
STOP	7.2	13.1	0	0	0	0	0	13.1	7.2											
PLAY	7.2	13.0	1.6	0	0	0	1.0	13.0	7.2											
F.F	7.2	13.0	0	0	0	0	0	13.0	7.2											
REF. NO.	IC6006																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	4.7	4.7	1.5	4.7	4.9	4.9	0	0.1	3.8	0.1	0	0	0	4.9	4.9				
PLAY	0	4.7	4.7	1.5	4.9	0	4.9	0	1.7	3.0	0.1	4.8	4.9	0	4.9	4.9				
F.F	0	4.7	4.7	1.2	4.7	4.9	4.9	0	0.1	3.0	0.1	0	0	0	4.9	4.9				
REF. NO.	IC6007																			
MODE	1	2	3																	
STOP	0	4.9	4.9																	
PLAY	0	4.9	4.9																	
F.F	0	4.9	4.9																	
REF. NO.	IC6008																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	4.7	4.7	4.9	4.9	4.9	4.9	0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9				
PLAY	0	4.7	4.7	4.9	4.9	0	4.9	0	3.3	4.9	4.9	0	4.9	4.9	4.9	4.9				
F.F	0	4.7	4.7	0	4.9	4.9	4.9	0	3.3	4.4	4.9	0	4.9	4.9	4.9	4.9				

SYSTEM CONTROL TRANSISTORs DC VOLTAGE CHART

REF. NO.	Q6001			Q6002			Q6003			Q6004			Q6005			Q6007(A)		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	13.1	7.2	13.1	8.7	8.7	8.0	0	3.6	0.1	7.2	13.1	7.8	-0.5	13.1	0.1	0	4.9	0
PLAY	13.0	7.1	13.0	8.6	8.6	7.9	0	3.6	0.1	7.2	13.0	7.8	-1.0	13.0	-0.5	0	4.9	0
F.F	13.0	7.2	13.0	8.6	8.6	7.9	0	3.6	0.1	7.1	13.0	7.8	2.7	12.1	2.8	0	4.9	0
REF. NO.	Q6007(B)																	
MODE	E	C	B															
STOP	0	4.9	0															
PLAY	0	4.9	0															
F.F	0	4.9	0															
REF. NO.	QR6001(A)			QR6001(B)			QR6002			QR6003(A)			QR6003(B)			QR6004		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	4.9	4.9	4.8	0	0	0	7.2	4.7	4.4	4.8	4.7	4.4	4.9	0	10.1	0
PLAY	0	5.0	0	4.9	4.8	0	0	0	7.1	4.7	4.4	4.8	4.7	4.4	2.3	0	10.0	0
F.F	0	0	4.9	4.9	4.8	0	0	0	7.1	4.7	4.5	4.8	4.7	4.4	4.8	0	10.0	0
REF. NO.	QR6005			QR6006(A)			QR6006(B)			QR6009			QR6010			Q6011(A)		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.7	4.4	4.9	4.9	4.6	4.9	4.9	4.6	4.9	4.7	4.6	0	0	0	13.4	4.7	4.5	3.9
PLAY	4.7	4.6	4.9	4.9	4.6	4.9	4.9	4.6	4.9	4.7	5.2	0	0	0	13.4	4.7	5.0	2.3
F.F	4.7	4.4	4.8	4.9	4.6	4.9	4.9	4.6	4.9	4.7	4.6	0	0	0	13.4	4.7	4.7	3.9
REF. NO.	QR6011(B)			QR6014(A)			QR6014(B)			QR6017			QR6019(A)			QR6019(B)		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.7	4.6	0	4.7	4.6	0.5	4.7	4.7	0.6	4.9	4.9	0	4.9	0	4.9	4.9	1.9	4.9
PLAY	4.6	5.2	3.6	4.7	5.2	0.5	4.7	5.2	0.6	4.9	0.1	4.9	4.9	0	4.9	4.9	2.9	4.9
F.F	4.7	4.6	0	4.7	4.6	0.5	4.7	4.7	0.6	4.9	4.9	0	4.9	0	4.9	4.9	0.1	4.9
REF. NO.	QR6020(A)			QR6020(B)			QR6022			QR6027			QR6029			QR6030		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	0	0	0	0	8.7	0	8.6	-0.2	4.7	0.2	0	8.0	0	0	0	4.9
PLAY	0	2.2	0	0	2.2	3.5	8.7	0	8.6	-1.2	4.8	-1.2	0	8.0	0	0	1.8	0
F.F	0	0	0	0	0	0	8.6	2.8	6.8	-1.9	5.5	-1.9	0	8.0	0	0	0	4.9
REF. NO.	QR6031(A)			QR6031(B)			QR6032(A)			QR6032(B)			QR6033(A)			QR6033(B)		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.9	-0.1	4.9	4.9	0	4.9	4.9	-0.1	4.9	4.9	-0.1	4.9	4.9	0.1	4.9	4.9	0.1	4.9
PLAY	4.9	-0.5	4.9	4.9	0.5	4.9	4.9	-0.7	4.9	4.9	-0.6	4.9	4.9	0	4.9	4.9	4.8	0
F.F	4.9	-0.6	4.9	4.9	0	4.9	4.9	4.8	0	4.9	0	4.9	4.9	-0.5	4.9	4.9	-0.4	4.9
REF. NO.	QR6034																	
MODE	E	C	B															
STOP	4.9	0	4.9															
PLAY	4.9	-1.0	4.9															
F.F	4.9	0	4.9															

3-21. SYSTEM CONTROL SCHEMATIC DIAGRAM


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
REMOTE CONTROL C.B.A.
(VEK4644)
TAKEUP PHOTO C.B.A.
(VEK3414)
Q1501
PN158NVMV
DEW DETECTOR
SUPPLY PHOTO C.B.A.
(VEK3415)
Q1502
PN158NV
CASSETTE DOWN SW
S1503
P6012
DEW DETECTOR
GND
P6010
REMOTE LED
REMOTE SW
GND
P6006
SUPPLY PHOTO
CASSETTE DOWN
GND
P6005
TAKEUP PHOTO
GND
SENSOR LED
D1501
LN59NV
P1503
SENSOR LED
GND
P1504
SENSOR LED
GND
POS (3)
POS (1)
POS. COM
POS (2)
T. REEL SENSOR
T. REEL LED
Q1503
ON2170
(T. REEL)
MECHANISM CONNECTION C.B.A. (VES0413)
MODE SELECT SW
S1501
P6007
POS. COM
POS (3)
POS (2)
POS (1)
T. REEL LED
T. REEL SENSOR
GND
SENSOR LED
GND
TO SUB VIDEO
CLOG
TO POWER
REG 5V
POWER OFF Ⓛ
UNREG GND
SW 12V
UNREG
REG 9V
P. SAVE Ⓗ
SRSF Ⓛ
POWER ON Ⓛ
SYSTEM 5V
CAM P. ON Ⓛ
TO SUB VIDEO
VMD 1
VMD 2
OUT/AWT/IN
SW6501
ESD100121
POWER
D6508
MA4033
D6501
BR3668S
SW6502
ESD100121
EJECT
SW6503
EVQQSB04B
STOP
D6502 (1/2)
MA141WA
SW6504
EVQQSB04B
REW
D6516
BR3668S
D6503 (1/2)
MA141WA
SW6505
EVQQSB04B
FF
D6517
BR3668S
D6504
MA141K
SW6506
EVQQSB04B
PAUSE
D6518
BR3668S
D6505 (1/2)
MA141WA
SW6507
EVQQSB04B
PLAY
D6519
BR3668S
D6502 (1/2)
MA141WA
SW6508
EVQQSB04B
REC
D6520
BR3668S
D6503 (1/2)
MA141WA
SW6510
EVQQSB04B
ADUB
D6522
BR3668S
D6505 (1/2)
MA141WA
SW6518
VST0098
CAM / VTR
D6510 (1/2)
MA141WA
SW6511
EVQQSB04B
TRACK UP
D6511
MA141K
SW6512
EVQQSB04B
TRACK DOWN
D6512
MA141K
SW6514
EVQQSB04B
COUNTER MEM
D6514
MA141K
SW6515
EVQQSB04B
COUNTER CLR
D6510 (1/2)
MA141WA
SW6516
EVQQSB04B
SHIFT
SW6517
EVQQSB04B
SET
VTR OPERATION C.B.A.
(VEP06613A)
P6501
POWER LED
A-DUB LED
KEY 5
A.D. SW COM
SCAN 2
SHIFT
FF LED
SET
KEY 4
SCAN 3
SCAN 1
POWER EJECT SW
REW LED
KEY 1
GND
C. DOWN
KEY 2
REC LED
KEY 3
PLAY LED
PAUSE LED
P6002 (TO CAMERA OPERATION)
P6701-1 MACRO RESET
P6701-2 SCAN 1
P6701-3 SCAN 5
P6701-4 KEY 7
P6701-5 SCAN 6
P6701-6 STAND-BY LED
P6701-7 SCAN 2
P6701-8 KEY 8
P6701-9 GND
P6701-10 FADER KEY
P6003
POWER LED
A-DUB LED
KEY 5
AD SW COM
SCAN 2
SHIFT
FF LED
SET
KEY 4
SCAN 3
SCAN 1
POWER EJECT SW
REW LED
KEY 1
GND
C. DOWN
KEY 2
REC LED
KEY 3
PLAY LED
PAUSE LED
SAFETY TAB SW
P6016
S-TAB SW
GND
D6025
MA141K
D6021
MA141K
D6022
MA141K
QR6002
UN5212
(POWER/EJECT SW ON: ON)
Q6001
2SB1218
(POWER/EJECT SW Ⓛ: ON)
R6003
3300
R6004
5600
R6007
10K
C6003
25V10
R6073
390
R6006
10K
C6027
25V10
QR6004
UN5213
(POWER OFF Ⓗ: ON)
QR6006
XN1217
(C LOG Ⓗ: ON)
(REMOTE SW Ⓗ: ON)
R6079
10K
D6003
MA141WA
D6001
MA141WA
L6001
100µ
C6001
0.1
C6002
16V47
QR6001
XN4312
(CAMERA POWER ON Ⓗ: ON)
Q6006
2SD1819
(OUT/AWT/IN Ⓛ: ON)
R6106
10K
R6108
68K
R6107
4700
Q6007
XN1501
(OUT/AWT/IN Ⓛ: ON)
R6111
4700
R6112
4700
R6110
10K
R6109
27K
QR6003
XN1217
(SWITCHING)
R6005
10K
(A 3)
(A 4)
(A 5)
A-LINE
(A 1)
(A 2)
IC6008
µPD4094BG
STRB
DATA
CLOCK
FF
REW
PLAY
PAUSE
VCC
OE
REC
STAND-BY
MACRO
A-DUB
QR6031
XN1113
(LED DRIVE)
QR6034
UN5113
(LED DRIVE)
R6098
390
R6027
10K
R6103
390
R6025 390
QR6005
UN5217
(LINE Ⓛ: ON)
D6002
MA141K
QR6011
XN1217
(SWITCHING)
D6005
MA141WA
C6024
5600P
R6008
10K
R6077
10K
QR6022
UN5113
(SENSOR DRIVE)
R6094
100
R6097
100
C6030
25V220
Q6005
2SD1820
(SENSOR 5V REG.)
C6031
150P
R6074
330
R6075
330
R6076
270
IC6007 MN12821-Q
OUTPUT CIRCUIT
V1
V2
POWER VOLTAGE DET.
C6004
10V33
C6005
0.1
D6004
MA141WK
IC6001 µPD4094BG
S-TAB
DATA
CLOCK
VMD1
VMD2
CAMERA POWER ON
POWER OFF Ⓗ
VSS
VCC
OE
POWER LED
FM MUTE
REMOTE LED
TALLY LED
C6029
330P
R6010
470
R6011
10K
R6009
10K
R6091
1M
X6001
VSX
0299
(B 8)
(B 9)
(C 4)
(C 5)
R6016 10K
R6017 10K
R6018 10K
R6019 10K
R6020 10K
R6021 10K
R6022 10K
R6023 10K
R6036 10K
R6037 10K
R6033 10K
R6029 10K
R6034 10K
R6035 10K
R6032 10K
(B 1)
(B 2)
(B 3)
(B 4)
(B 5)
R6105
390
(A.D. SW Ⓗ: ON)
QR6030
UN5213
QR6009
UN5217 (INV.)
D6009
MA141WA
R6078
10K
D6011
MA141K
QR6014
XN1217
(S. TAB Ⓛ. OFF)
(C. DOWN Ⓛ: OFF)
D6018
MA141WK
C6028
50V1
R6015
10K
R6089
3300
QR6010
UN521E
(EXT. 12V Ⓗ: ON)
(EJECT SW ON: ON)
QR6027
UN5213
D6023
MA141K
(D 2)
(D 1)
(C 2)
(C 1)
QR6033
XN1113
(LED DRIVE)
R6101
390
R6102 390
R6099
390
R6100
390
QR6032
XN1113
(LED DRIVE)
(B 6)
(B 7)
D6010
MA141K
B-LINE

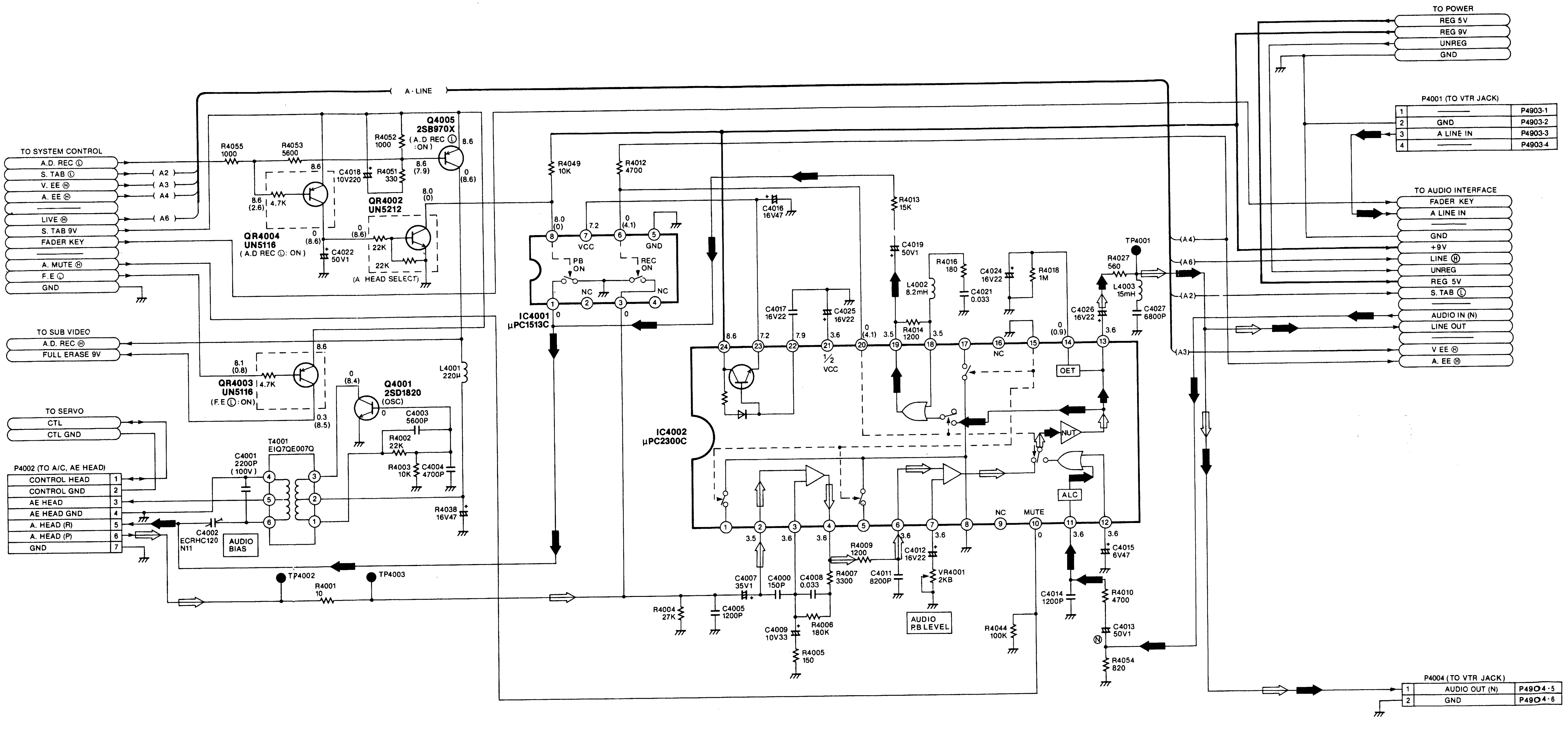

IC 6005 M54543AL
LOADING MOTOR DRIVE
P6004 (TO LOADING MOTOR)
1 MOTOR (–)
2 MOTOR (+)
IC 6006 μPD4094BG
STRB
DATA
CLOCK
AD ON ⊕
ENV. GAIN UP
AD SW
SRSF
CE
FE ⊕
CYLINDER ON
PB ⊕
LINE ⊕
Q6004 2SD1820 (POWER STABLLIZER)
QR6035 UN4213
P6014 (TO VTR JACK)
1 S. CLK P4901-1
2 GND P4901-2
3 S. OUT P4901-3
4 REG. 5V P4901-4
5 LINE ⊕ P4901-5
6 EXT. 12V P4901-6
7 S. IN P4901-7
TO SERVO
CLY ON ⊕
PB CTL
H.A SW
H. SW
UTR 1
UTR 2
SP ⊕
R/P/M
R/F/S
CONTROL DUTY ⊕
S.D. REC ⊕
V0
V1
V. EE ⊕
SW2 OFF ⊕
TR. UP
TR. DOWN
TO SUB VIDEO
HD
VD
NON REC DATA
REC LED
V1
QR6022 UN5113 (SENSOR DRIVE)
Q6005 2SD1820 (SENSOR 5V REG.)
CHARACTOR POSITION ADJ.
VR6001 100KB
IC 6007 MN12821-Q
OUTPUT CIRCUIT
POWER VOLTAGE DET.
IC 6001 μPD4094BG
S-TAB
DATA
CLOCK
VMD1
VMD2
CAMERA POWER ON
POWER OFF ⊕
POWER LED
FM MUTE
REMOTE LED
TALLY LED
IC 6002 M50963
LOAD
UNLOAD
P.B. CONTROL
H SW
SERIAL DATA IN
SERIAL DATA OUT
SERIAL CLOCK
SENSOR LED
POWER SAVE
POWER OFF ⊕
SUPPLY PHOTO
TAKEUP PHOTO
T-REEL
POWER/EJECT SW
BATTERY
DEW
EXT STRB
CG CS
UTR
EXT PORT
SP/LP/SLP
VREF
A VSS
R/P/M
R/F/S
CONTROL DUTY
SD REC
TR. DOWN
TR. UP
KEY 1
SW2 OFF ⊕
A. MUTE ⊕
A. EE ⊕
V. EE ⊕
RE ⊕
H-D REC ⊕
A-D REC ⊕
V-D REC ⊕
AD CLOCK
5P-SERIAL CLOCK
SCAN6/EXT. CLOCK
SCAN5/EXT3 DATA
SCAN4/EXT2 DATA
SCAN3/EXT1 DATA
SCAN2/CG CLOCK
SCAN1/CG DATA
X'TAL IN
X'TAL OUT
CN VSS
RESET
X6001 VSX 0299
IC 6004 μPD6145G617A
CS
CLOCK
STRB
DATA
VCC
OSC
VSS
HOLD
HD
VD
NRD
RD
UNDER CUT ADJ.
QR6020 XN1213 (S. D. REC ⊕: ON) (PB CTL ⊕: ON)
QR6019 XN1112 (LED DRIVE)
TO AUDIO
F EE ⊕
FADER KEY
A. EE ⊕
S-TAB ⊕
A. MUTE ⊕
V. EE ⊕
S. TAB 5V
LINE ⊕
V. EE ⊕
FM D. REC ⊕
A.D. REC ⊕
FM MUTE ⊕
TO SUB VIDEO
S-TAB 5V
LINE ⊕
V. EE ⊕
V.D. REC ⊕
EDIT ⊕
REC DATA
R. ERASE ⊕
P.B ⊕
ENV. GAIN UP
IC 6003 S3500A2
T1
T2
F2
F1
DATA
RESET
CLOCK
SET
SHIFT
X6002 VSX249-1
Q6003 2SD1819 (DATA MIX)
S6001 ESD142127 EDIT
P6013 (TO A.D. BATTERY)
1 AD BATTERY
2 GND
P6011 (NOT CONNECT)
1 COMMON
2 C. REC
3 C. PLAY
4 C. POWERON
5 C. VTR
6 UNDER CUT
7 GND
8 C. EJECT
9 C. DOWN
QR6029 UN5213 (FE ⊕: ON)
QR6017 UN5111 (V. EE ⊕: ON)
Q6002 2SB970X (S. TAB ⊕: ON)
QR6027 UN5213 (EJECT SW ON: ON)
QR6010 UN521E (EXT. 12V ⊕: ON)
QR6009 UN5217 (INV.)
QR6030 UN5213 (A.D. SW ⊕: ON)
QR6014 XN1217
QR6011 XN1217 (SWITCHING)
QR6003 XN1217 (SWITCHING)
D5003 MA141WA
D6001 MA141WA
(REMOTE SW ⊕: ON)
(S. TAB ⊕: OFF)
(C. DOWN ⊕: OFF)
A - LINE
B - LINE
C - LINE
D - LINE
E - LINE
F - LINE

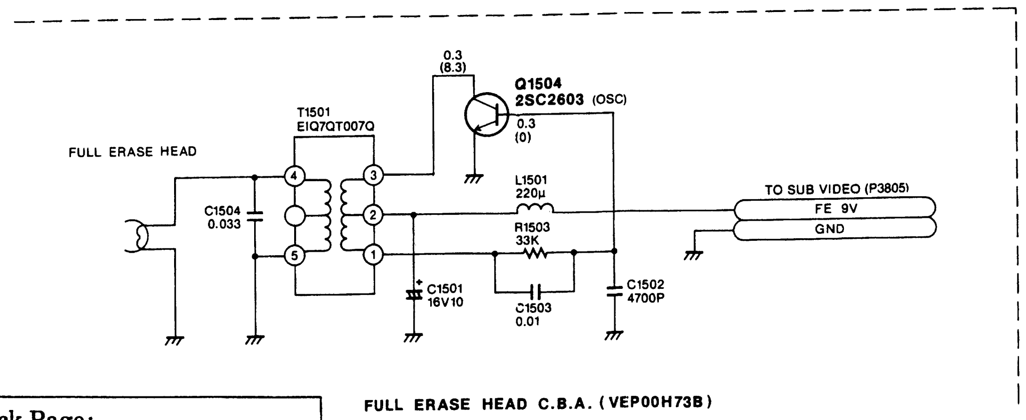
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

10 11 12 13 14 15 16 17 18 19 20 21 22 23

3-22. AUDIO SCHEMATIC DIAGRAM

⬅ MAIN SIGNAL PATH IN REC MODE ⇦ MAIN SIGNAL PATH IN PLAYBACK MODE


TO SYSTEM CONTROL
A.D. REC Ⓛ
S. TAB Ⓛ
V. EE Ⓗ
A. EE Ⓗ
LIVE Ⓗ
S. TAB 9V
FADER KEY
A. MUTE Ⓗ
F. E Ⓛ
GND
A2
A3
A4
A6
A-LINE
R4055 1000
R4053 5600
R4052 1000
Q4005 2SB970X (A.D REC Ⓛ :ON)
C4018 10V220
R4051 330
QR4002 UN5212
QR4004 UN5116 (A.D REC Ⓛ: ON)
C4022 50V1
22K
4.7K
(A HEAD SELECT)
TO SUB VIDEO
A.D. REC Ⓗ
FULL ERASE 9V
QR4003 UN5116 (F.E Ⓛ:ON)
Q4001 2SD1820 (OSC)
L4001 220μ
C4003 5600P
R4002 22K
R4003 10K
C4004 4700P
R4038 16V47
T4001 EIQ7QE007Q
C4001 2200P (100V)
C4002 ECRHC120 N11
AUDIO BIAS
TO SERVO
CTL
CTL GND
P4002 (TO A/C, AE HEAD)
CONTROL HEAD
CONTROL GND
AE HEAD
AE HEAD GND
A. HEAD (R)
A. HEAD (P)
GND
TP4002
TP4003
R4001 10
R4049 10K
R4012 4700
IC4001 μPC1513C
VCC
GND
PB ON
REC ON
NC
C4016 16V47
R4013 15K
C4019 50V1
L4002 8.2mH
R4016 180
C4024 16V22
R4018 1M
C4021 0.033
R4014 1200
C4017 16V22
C4025 16V22
½ VCC
TP4001
R4027 560
L4003 15mH
C4026 16V22
C4027 6800P
IC4002 μPC2300C
OET
NUT
ALC
NC
MUTE
C4015 6V47
R4009 1200
C4012 16V22
VR4001 2KB
AUDIO P.B LEVEL
C4007 35V1
C4000 150P
C4008 0.033
R4007 3300
C4011 8200P
R4004 27K
C4005 1200P
C4009 10V33
R4006 180K
R4005 150
R4044 100K
C4014 1200P
R4010 4700
C4013 50V1
R4054 820
TO POWER
REG 5V
REG 9V
UNREG
GND
P4001 (TO VTR JACK)
GND
A LINE IN
P4903-1
P4903-2
P4903-3
P4903-4
TO AUDIO INTERFACE
FADER KEY
A LINE IN
GND
+9V
LINE Ⓗ
UNREG
REG 5V
S. TAB Ⓛ
AUDIO IN (N)
LINE OUT
V. EE Ⓗ
A. EE Ⓗ
P4004 (TO VTR JACK)
AUDIO OUT (N)
GND
P4904-5
P4904-6


T1501 EIQ7QT007Q
FULL ERASE HEAD
C1504 0.033
Q1504 2SC2603 (OSC)
0.3 (8.3)
0.3 (0)
L1501 220μ
R1503 33K
C1501 16V10
C1503 0.01
C1502 4700P
TO SUB VIDEO (P3805)
FE 9V
GND

FULL ERASE HEAD C.B.A. (VEP00H73B)

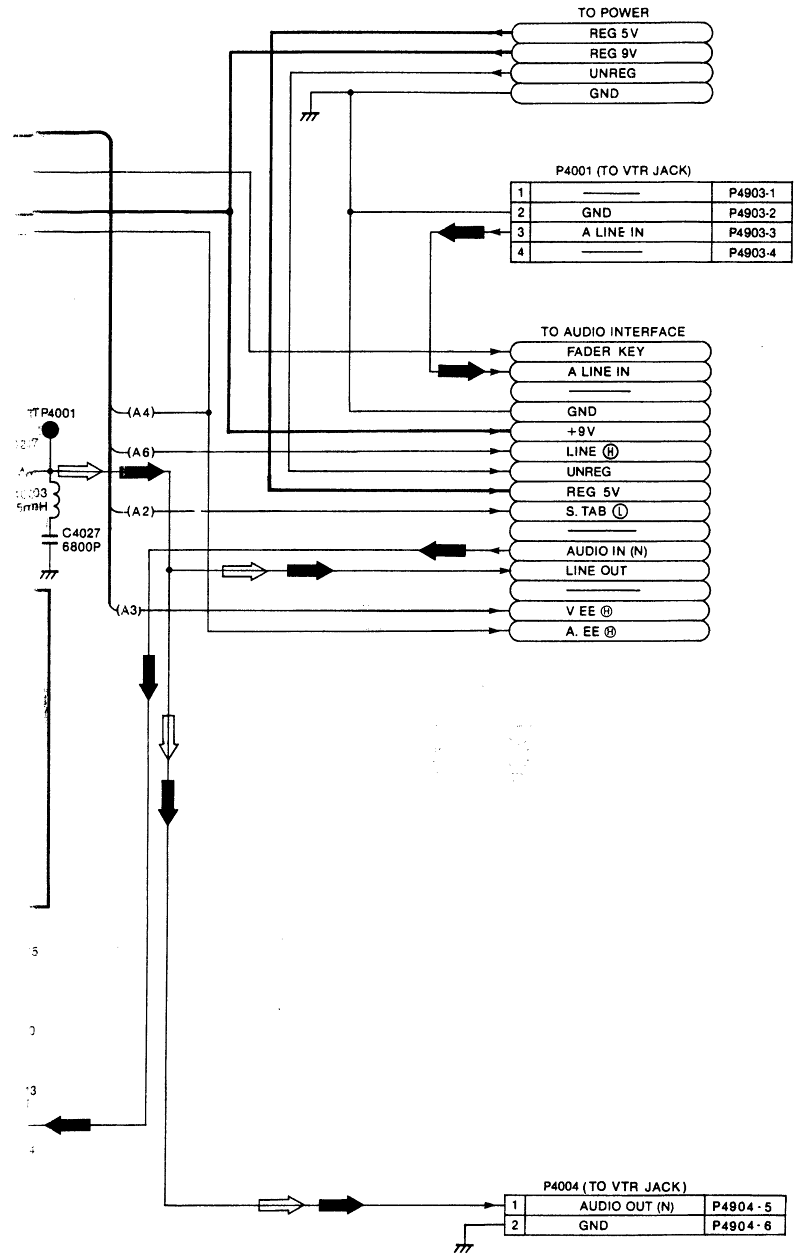
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

- LINE IN SIGNAL LEVEL... 10dB 1kHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
SYSTEM CONTROL Section

L PATH IN PLAYBACK MODE


TO POWER
REG 5V
REG 9V
UNREG
GND
P4001 (TO VTR JACK)
1
P4903-1
2
GND
P4903-2
3
A LINE IN
P4903-3
4
P4903-4
TO AUDIO INTERFACE
FADER KEY
A LINE IN
GND
+9V
LINE Ⓗ
UNREG
REG 5V
S. TAB Ⓛ
AUDIO IN (N)
LINE OUT
V EE Ⓗ
A. EE Ⓗ
TP4001
(A4)
(A6)
(A2)
(A3)
C4027
6800P
P4004 (TO VTR JACK)
1
AUDIO OUT (N)
P4904-5
2
GND
P4904-6

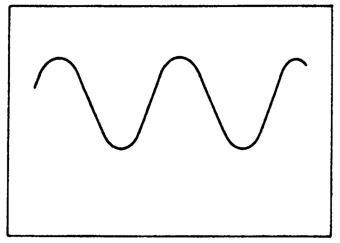
ODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE
NAL.
ODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
NAL.

EL... — 10dB 1kHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

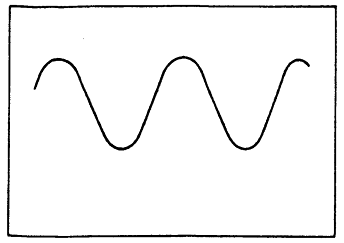
3-23. AUDIO INTERFACE SCHEMATIC DIAGRAM

AUDIO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 4000 Servies)

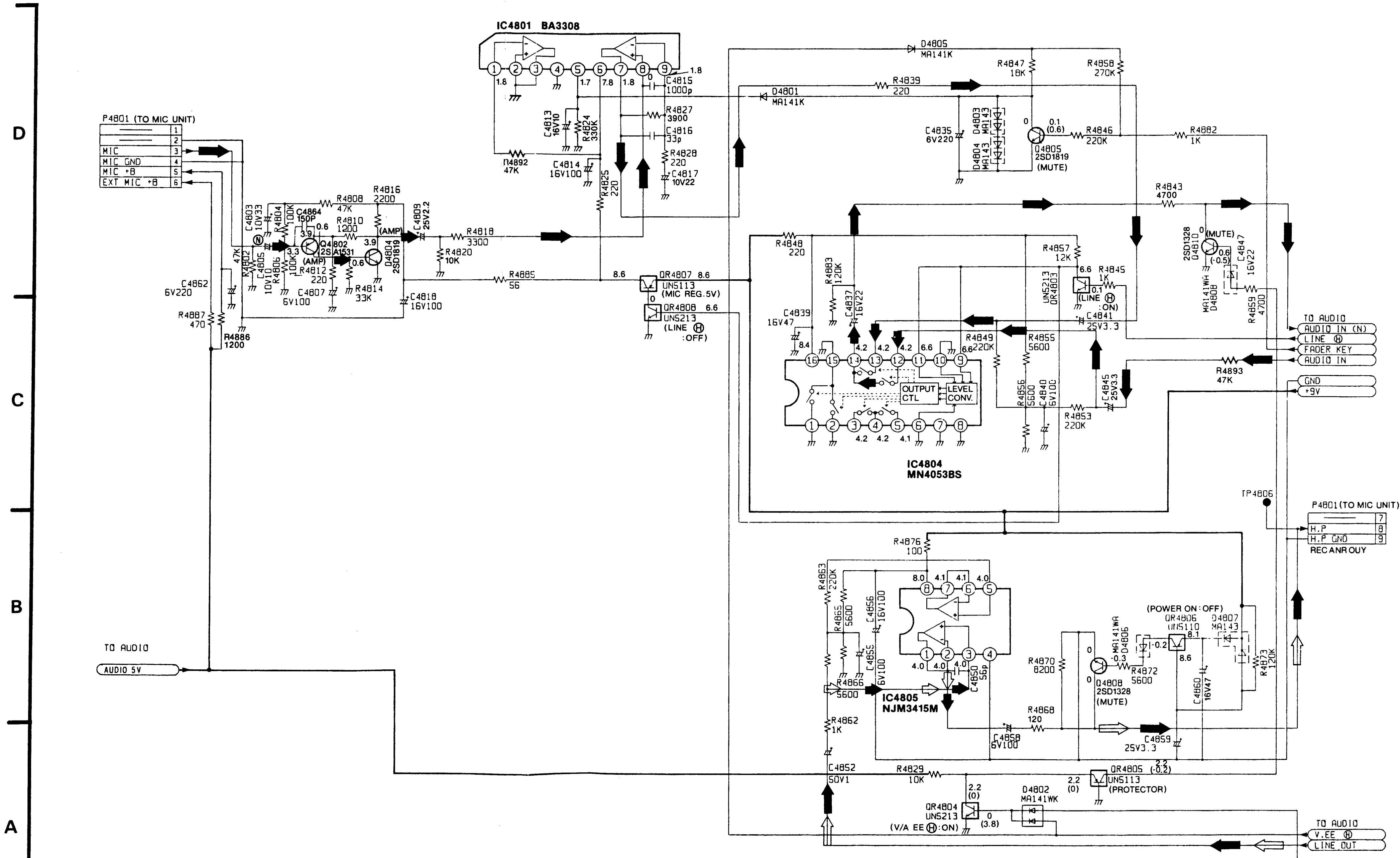


TP4001 PLAY/REC
0.5V/0.5msec. div. 1.0Vp-p

AUDIO INTERFACE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 4800 Servies)



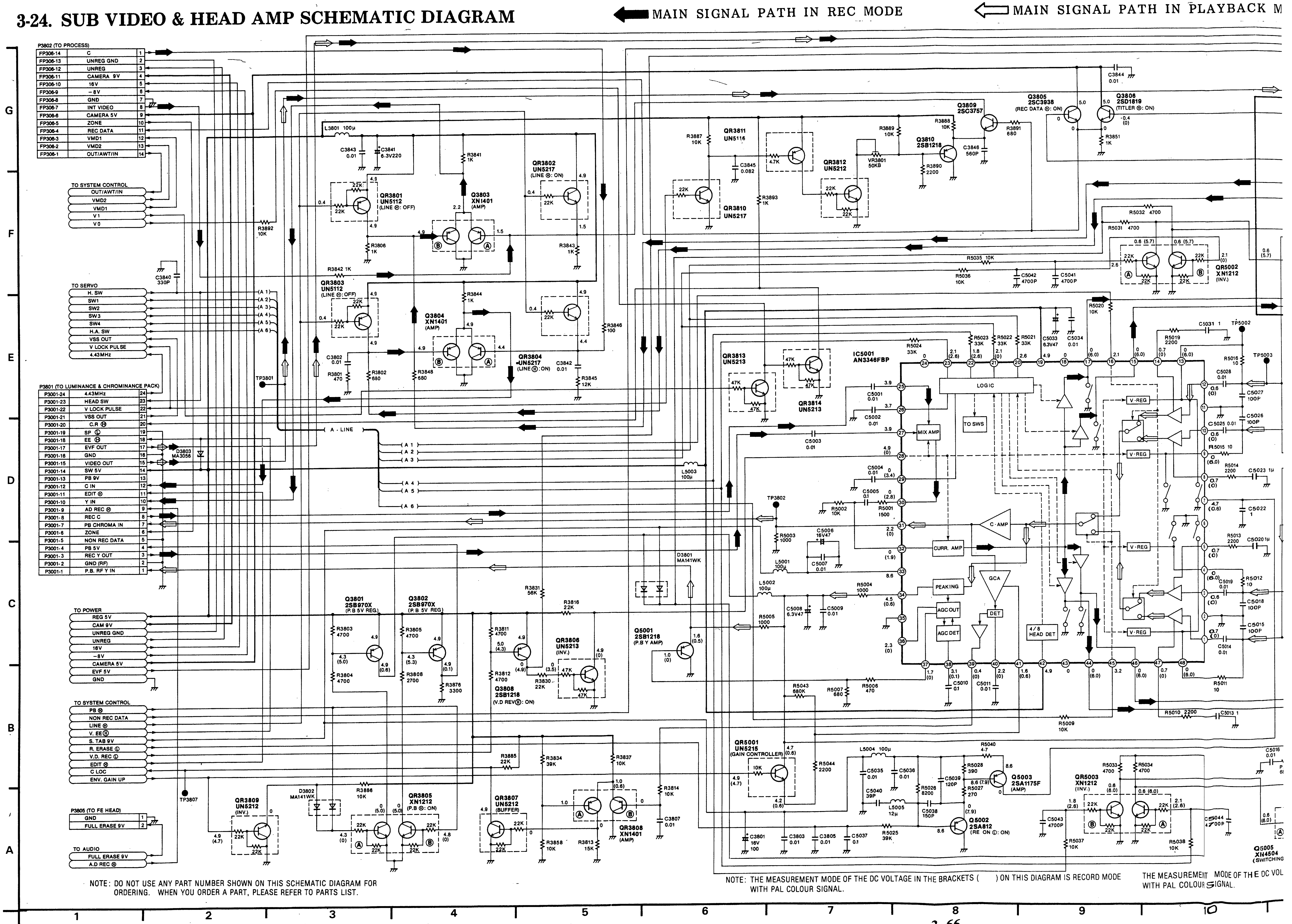
TP4806
0.5V/0.5msec. div. 1.5Vp-p


IC4801 BA3308
1.8
1.7
7.8
1.8
0
1.8
C4815
1000p
R4827
3900
C4816
33p
R4828
220
C4817
10V22
C4813
16V10
R4824
330K
R4892
47K
C4814
16V100
R4825
220
P4801 (TO MIC UNIT)
MIC
MIC GND
MIC +B
EXT MIC +B
C4803
10V33
R4804
100K
C4864
150P
R4808
47K
R4816
2200
R4810
1200
Q4802
2SA1531
(AMP)
Q4804
2SD1819
(AMP)
C4809
25V2.2
R4818
3300
R4820
10K
R4802
47K
C4805
10V10
R4806
100K
R4812
220
C4807
6V100
R4814
33K
C4818
16V100
R4885
56
C4862
6V220
R4887
470
R4886
1200
QR4807
UN5113
(MIC REG.5V)
8.6
QR4808
UN5213
(LINE Ⓗ :OFF)
6.6
D4801
MA141K
D4805
MA141K
R4839
220
R4847
18K
R4858
270K
C4835
6V220
D4803
MA143
D4804
MA143
Q4805
2SD1819
(MUTE)
0.1
(0.6)
R4846
220K
R4882
1K
R4843
4700
Q4810
2SD1328
(MUTE)
0.6
(-0.5)
C4847
16V22
D4808
MA141WA
R4859
4700
R4848
220
R4883
120K
C4837
16V22
C4839
16V47
8.4
R4857
12K
R4845
1K
UN5213
QR4803
(LINE Ⓗ :ON)
C4841
25V3.3
R4849
220K
R4855
5600
R4856
5600
C4840
6V100
R4853
220K
C4845
25V3.3
OUTPUT CTL
LEVEL CONV.
4.2
4.2
4.2
6.6
6.6
4.2
4.2
4.1
IC4804
MN4053BS
TO AUDIO
AUDIO IN (N)
LINE Ⓗ
FADER KEY
AUDIO IN
R4893
47K
GND
+9V
TP4806
P4801 (TO MIC UNIT)
7
H.P
8
H.P GND
9
REC ANR OUY
R4876
100
R4863
220K
R4865
5600
C4856
16V100
C4855
6V100
8.0
4.1
4.1
4.0
4.0
4.0
4.0
C4850
56p
R4866
5600
IC4805
NJM3415M
R4862
1K
C4852
50V1
R4829
10K
R4870
8200
Q4808
2SD1328
(MUTE)
D4806
MA141WA
-0.3
R4872
5600
(POWER ON : OFF)
QR4806
UN5110
8.1
-0.2
8.6
D4807
MA143
R4873
120K
C4860
16V47
R4868
120
C4858
6V100
C4859
25V3.3
QR4805
UN5113
(PROTECTOR)
2.2
(-0.2)
2.2
(0)
QR4804
UN5213
(V/A EE Ⓗ :ON)
0
(3.8)
D4802
MA141WK
TO AUDIO
V.EE Ⓗ
LINE OUT
A.EE Ⓗ
TO AUDIO
AUDIO 5V
D
C
B
A
8
9
1
2
3
4
5
6
7

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

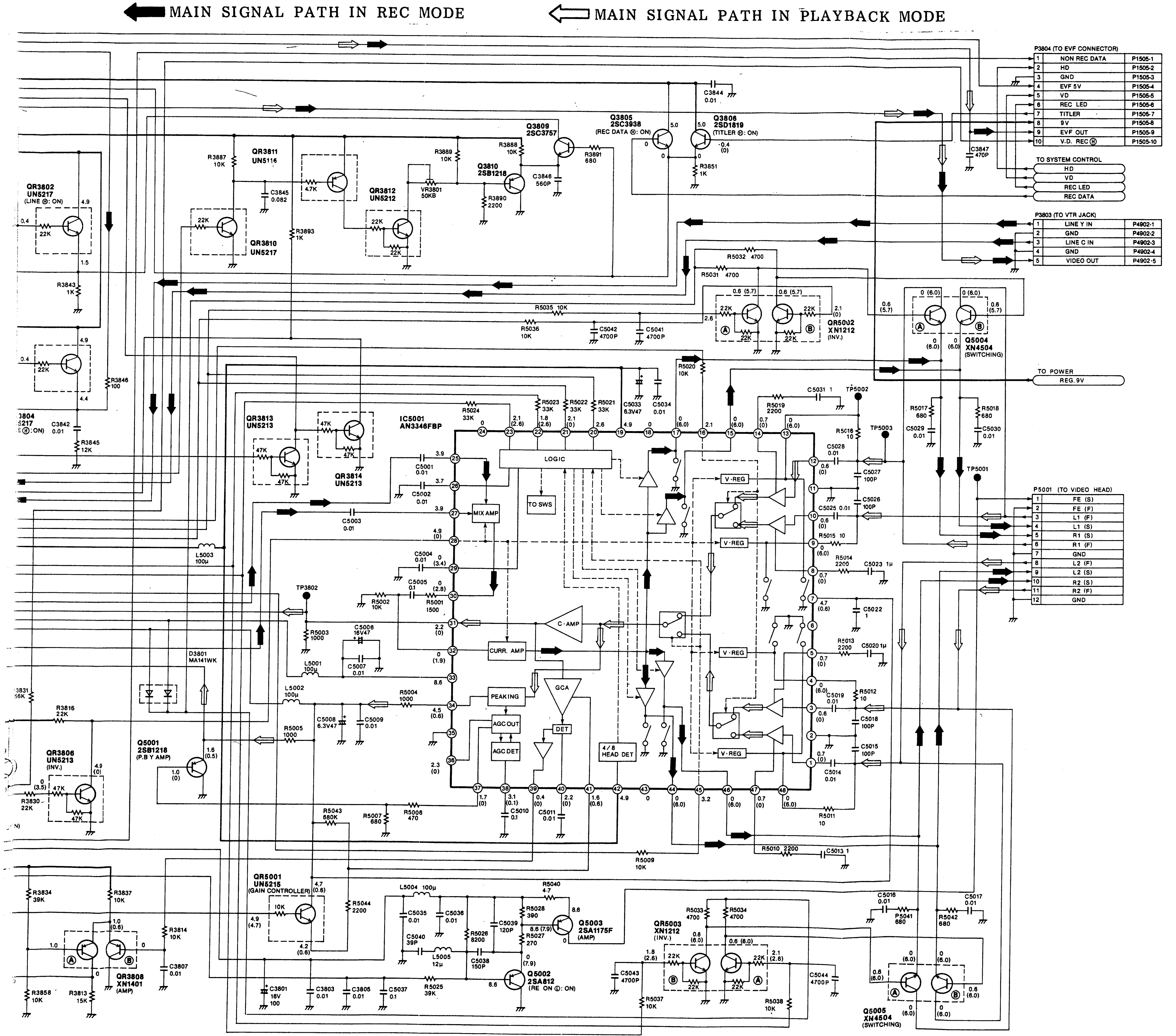
3-24. SUB VIDEO & HEAD AMP SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK M
P3802 (TO PROCESS)
FP306-14 C 1
FP306-13 UNREG GND 2
FP306-12 UNREG 3
FP306-11 CAMERA 9V 4
FP306-10 16V 5
FP306-9 −8V 6
FP306-8 GND 7
FP306-7 INT VIDEO 8
FP306-6 CAMERA 5V 9
FP306-5 ZONE 10
FP306-4 REC DATA 11
FP306-3 VMD1 12
FP306-2 VMD2 13
FP306-1 OUT/AWT/IN 14
TO SYSTEM CONTROL
OUT/AWT/IN
VMD2
VMD1
V1
V0
TO SERVO
H. SW
SW1
SW2
SW3
SW4
H.A. SW
VSS OUT
V LOCK PULSE
4.43MHz
P3801 (TO LUMINANCE & CHROMINANCE PACK)
P3001-24 4.43MHz 24
P3001-23 HEAD SW 23
P3001-22 V LOCK PULSE 22
P3001-21 VSS OUT 21
P3001-20 C.R Ⓗ 20
P3001-19 SP Ⓛ 19
P3001-18 EE Ⓗ 18
P3001-17 EVF OUT 17
P3001-16 GND 16
P3001-15 VIDEO OUT 15
P3001-14 SW 5V 14
P3001-13 PB 9V 13
P3001-12 C IN 12
P3001-11 EDIT Ⓗ 11
P3001-10 Y IN 10
P3001-9 AD REC Ⓗ 9
P3001-8 REC C 8
P3001-7 PB CHROMA IN 7
P3001-6 ZONE 6
P3001-5 NON REC DATA 5
P3001-4 PB 5V 4
P3001-3 REC Y OUT 3
P3001-2 GND (RF) 2
P3001-1 P.B. RF Y IN 1
TO POWER
REG 5V
CAM 9V
UNREG GND
UNREG
16V
−8V
CAMERA 5V
EVF 5V
GND
TO SYSTEM CONTROL
PB Ⓗ
NON REC DATA
LINE Ⓗ
V. EEⒽ
S. TAB 9V
R. ERASE Ⓛ
V.D. REC Ⓛ
EDIT Ⓗ
C LOC
ENV. GAIN UP
P3805 (TO FE HEAD)
GND 1
FULL ERASE 9V 2
TO AUDIO
FULL ERASE 9V
A.D REC Ⓗ
L3801 100μ
C3843 0.01
C3841 6.3V220
R3841 1K
QR3801 UN5112 (LINE Ⓗ: OFF)
Q3803 XN1401 (AMP)
QR3802 UN5217 (LINE Ⓗ: ON)
R3892 10K
R3806 1K
R3843 1K
C3840 330P
R3842 1K
QR3803 UN5112 (LINE Ⓗ: OFF)
R3844 1K
Q3804 XN1401 (AMP)
R3846 100
QR3804 UN5217 (LINE Ⓗ: ON)
C3842 0.01
R3845 12K
C3802 0.01
R3801 470
R3802 680
R3848 680
TP3801
A - LINE
D3803 MA3056
R3887 10K
QR3811 UN5116
C3845 0.082
R3893 1K
QR3810 UN5217
QR3812 UN5212
VR3801 50KB
R3889 10K
R3888 10K
Q3809 2SC3757
Q3810 2SB1218
R3890 2200
C3846 560P
R3891 680
Q3805 2SC3938 (REC DATA Ⓗ: ON)
Q3806 2SD1819 (TITLER Ⓗ: ON)
C3844 0.01
R3851 1K
R5032 4700
R5031 4700
R5035 10K
R5036 10K
C5042 4700P
C5041 4700P
QR5002 XN1212 (INV.)
R5020 10K
C5031 1
TP5002
R5019 2200
TP5003
R5018 10
C5028 0.01
C5027 100P
C5026 100P
C5025 0.01
R5015 10
R5014 2200
C5023 1μ
C5022 1
R5013 2200
C5020 1μ
R5012 10
C5019 0.01
C5018 100P
C5015 100P
C5014 0.01
R5011 10
R5010 2200
C5013 1
R5009 10K
R5024 33K
R5023 33K
R5022 33K
R5021 33K
C5033 6.3V47
C5034 0.01
QR3813 UN5213
QR3814 UN5213
IC5001 AN3346FBP
LOGIC
TO SWS
MIX AMP
C-AMP
CURR. AMP
PEAKING
GCA
AGC OUT
AGC DET
DET
4/8 HEAD DET
V-REG
C5001 0.01
C5002 0.01
C5003 0.01
C5004 0.01
C5005 0.1
R5001 1500
R5002 10K
TP3802
R5003 1000
C5006 16V47
C5007 0.01
L5001 100μ
L5003 100μ
D3801 MA141WK
L5002 100μ
R5004 1000
C5008 6.3V47
C5009 0.01
R5005 1000
Q5001 2SB1218 (P.B Y AMP)
R5043 680K
R5007 680
R5006 470
C5010 0.1
C5011 0.01
Q3801 2SB970X (P.B 5V REG)
Q3802 2SB970X (P.B 5V REG)
R3803 4700
R3804 4700
R3805 4700
R3808 2700
R3876 3300
R3831 56K
R3816 22K
R3811 4700
R3812 4700
Q3808 2SB1218 (V.D REVⒽ: ON)
QR3806 UN5213 (INV.)
R3830 22K
TP3807
QR3809 UN5212 (INV.)
D3802 MA141WK
R3886 10K
QR3805 XN1212 (P.B Ⓗ: ON)
R3885 22K
R3834 39K
R3837 10K
QR3807 UN5212 (BUFFER)
QR3808 XN1401 (AMP)
R3858 10K
R3813 15K
R3814 10K
C3807 0.01
QR5001 UN5215 (GAIN CONTROLLER)
R5044 2200
C3801 16V 100
C3803 0.01
C3805 0.1
C5037 0.1
L5004 100μ
C5035 0.01
C5036 0.01
C5040 39P
L5005 12μ
C5039 120P
R5026 8200
C5038 150P
R5040 4.7
R5028 390
R5027 270
Q5003 2SA1175F (AMP)
Q5002 2SA812 (RE ON Ⓒ: ON)
R5025 39K
QR5003 XN1212 (INV.)
R5033 4700
R5034 4700
C5043 4700P
R5037 10K
R5038 10K
C5044 4700P
C5016 0.01
Q5005 XN4504 (SWITCHING
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

THE MEASUREMENT MODE OF THE DC VOL WITH PAL COLOUR SIGNAL.

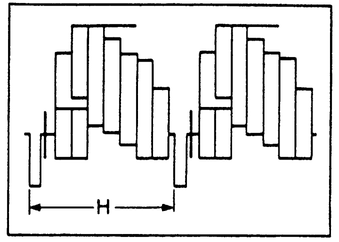

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
P3804 (TO EVF CONNECTOR)
1 NON REC DATA P1505-1
2 HD P1505-2
3 GND P1505-3
4 EVF 5V P1505-4
5 VD P1505-5
6 REC LED P1505-6
7 TITLER P1505-7
8 9V P1505-8
9 EVF OUT P1505-9
10 V.D. REC P1505-10
TO SYSTEM CONTROL
HD
VD
REC LED
REC DATA
P3803 (TO VTR JACK)
1 LINE Y IN P4902-1
2 GND P4902-2
3 LINE C IN P4902-3
4 GND P4902-4
5 VIDEO OUT P4902-5
TO POWER
REG. 9V
P5001 (TO VIDEO HEAD)
1 FE (S)
2 FE (F)
3 L1 (F)
4 L1 (S)
5 R1 (S)
6 R1 (F)
7 GND
8 L2 (F)
9 L2 (S)
10 R2 (S)
11 R2 (F)
12 GND
QR3802 UN5217 (LINE ⓗ: ON)
QR3811 UN5116
QR3810 UN5217
QR3812 UN5212
Q3809 2SC3757
Q3810 2SB1218
Q3805 2SC3938 (REC DATA ⓗ: ON)
Q3806 2SD1819 (TITLER ⓗ: ON)
QR3813 UN5213
QR3814 UN5213
IC5001 AN3346FBP
LOGIC
TO SWS
MIX AMP
C-AMP
CURR. AMP
PEAKING
GCA
AGC OUT
AGC DET
DET
4/8 HEAD DET
V-REG
QR5002 XN1212 (INV.)
Q5004 XN4504 (SWITCHING)
TP5002
TP5003
TP5001
TP3802
D3801 MA141WK
Q5001 2SB1218 (P.B Y AMP)
QR3806 UN5213 (INV.)
QR5001 UN5215 (GAIN CONTROLLER)
QR3808 XN1401 (AMP)
Q5003 2SA1175F (AMP)
Q5002 2SA812 (RE ON ⓛ: ON)
QR5003 XN1212 (INV.)
Q5005 XN4504 (SWITCHING)
5
6
7
8
9
10
11
12

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

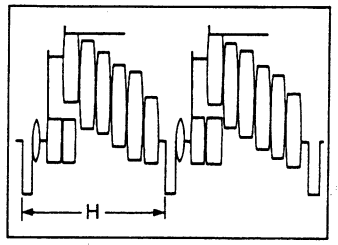
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

SUB VIDEO & HEAD AMP Section

SUB VIDEO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 3800 Series)



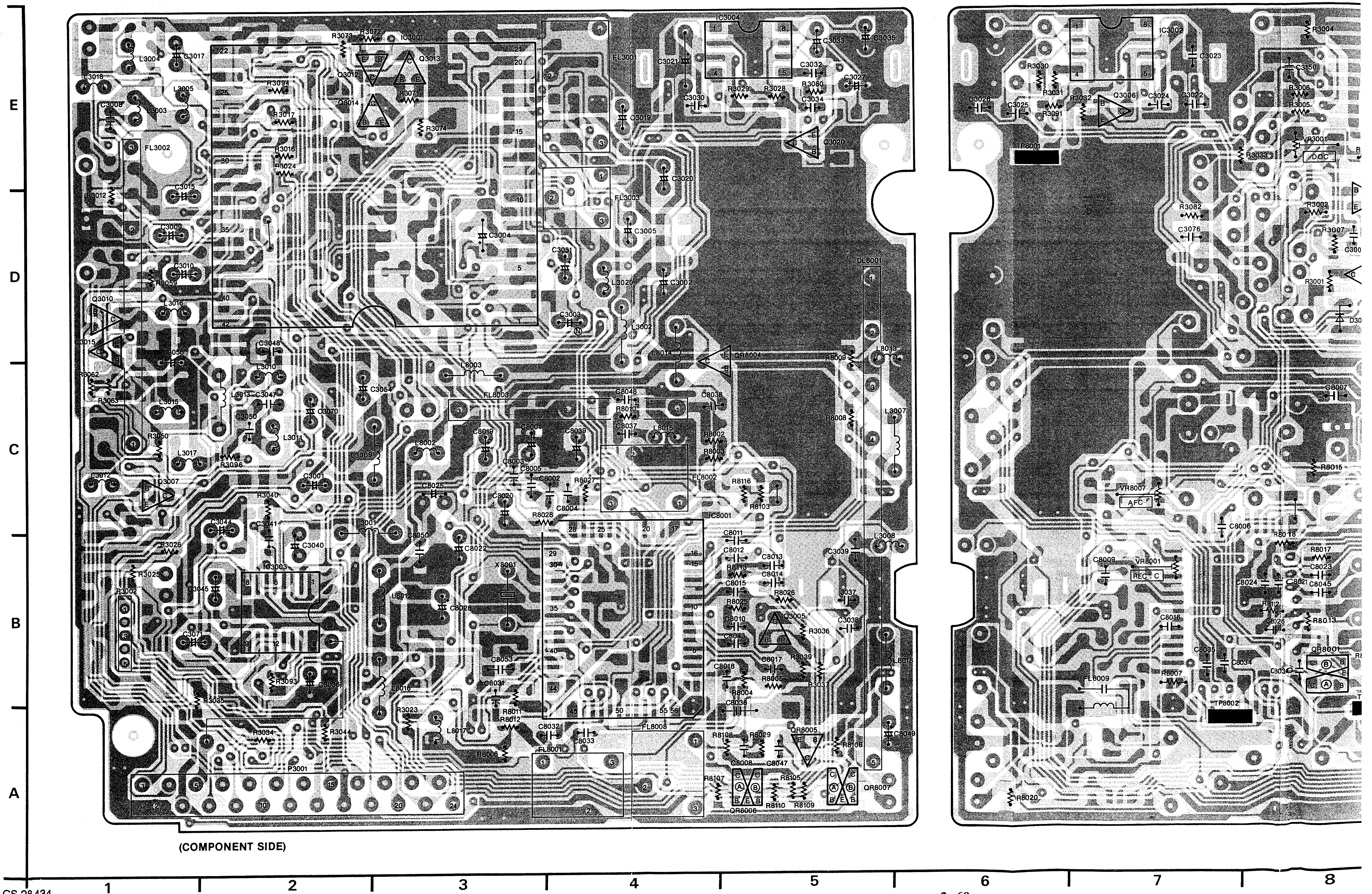
TP3801 REC
0.5V/20µsec. div. 1.2Vp-p



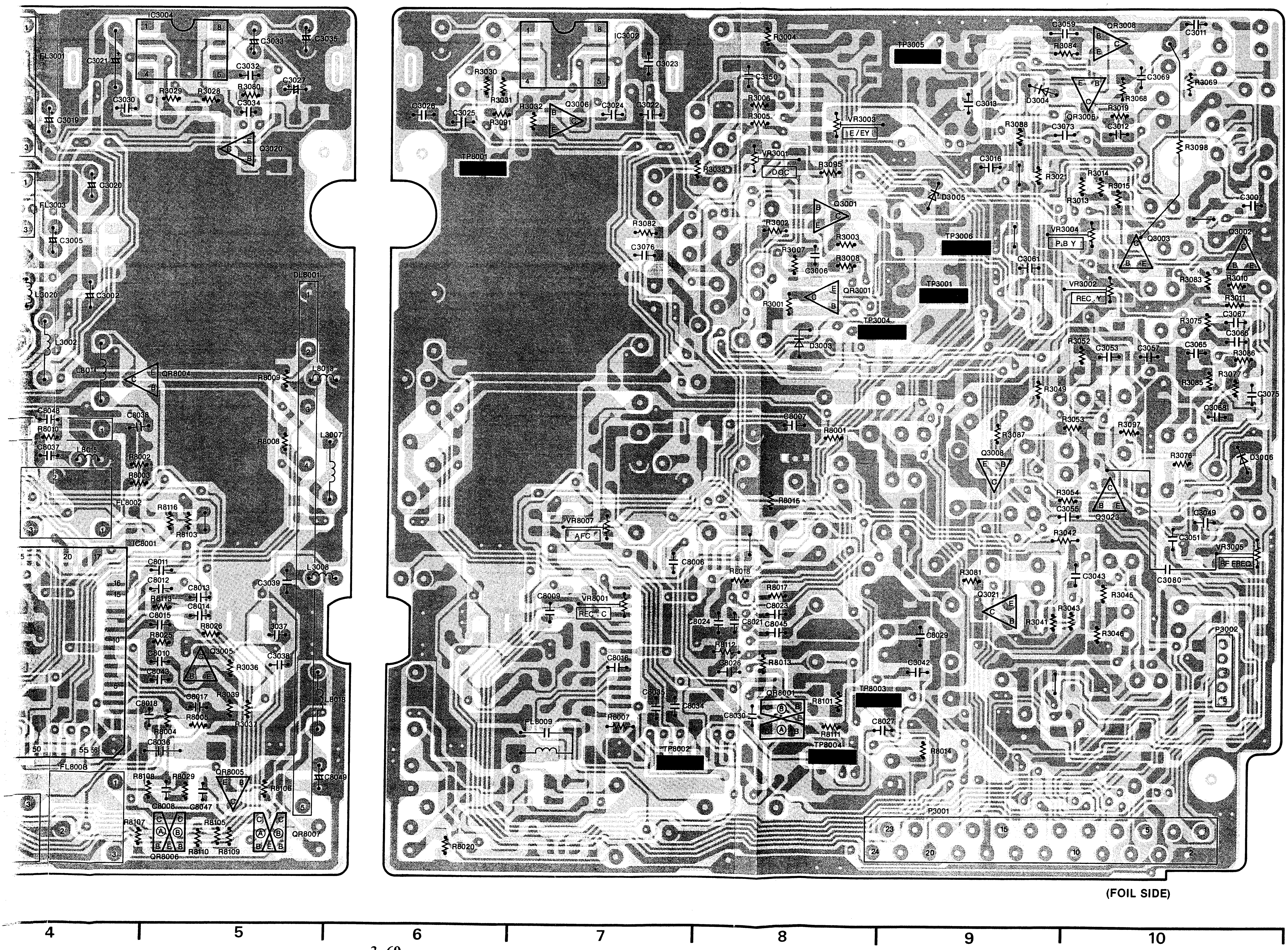
TP3801 PLAY
0.5V/20µsec. div. 1.3Vp-p

Next Page:
LUMINANCE & CHROMINANCE Section

3-25. LUMINANCE & CHROMINANCE C.B.A.


E
D
C
B
A
1
2
3
4
5
6
7
8
L3004
C3017
L3018
L3005
C3008
R3003
FL3002
R3012
C3015
C3009
C3010
R3059
Q3010
L3016
Q3015
C3058
R3062
R3063
L3015
L3013
C3047
C3050
R3050
L3017
R3096
L3012
Q3007
C3001
R3040
C3044
C3041
R3026
C3040
R3025
IC3003
R3002
C3045
C3071
R3093
C3036
R3035
R3034
R3044
P3001
R3073
R3072
IC3001
Q3012
Q3013
R3094
R3071
Q3014
R3017
R3074
R3016
R3024
C3048
L3010
C3070
L3011
C3054
C3069
L8003
FL8003
L8002
C8025
L3001
C3050
C3022
C3028
L3012
L8016
R3023
L8017
C3004
C3031
L3020
C3003
L3002
FL3001
C3019
FL3003
C3005
C3002
C3021
C3020
IC3004
C3033
Q3035
C3032
R3029
R3028
R3080
C3027
C3030
C3034
Q3020
DL8001
L8014
QR8004
R8009
L8013
C8048
R8010
C8037
L8015
C8038
R8008
L3007
C8019
C8001
C8039
R8002
R8003
C8003
C8005
C8002
R8027
FL8002
C8004
C8020
R8028
R8116
R8103
IC8001
X8001
C8011
C8012
C8013
R8113
C8014
C8015
R8026
C3039
L3008
C3037
R8025
C8010
Q3005
R3036
C3038
C8043
C8018
C8017
R3039
R8005
R3037
L8018
C8053
C8031
R8011
R8012
R8004
C8036
C8032
C8033
FL8008
R8006
FL8001
R8108
R8029
QR8005
R8106
C8049
C8008
C8047
R8107
R8105
QR8006
R8110
R8109
QR8007
IC3002
R3030
R3031
R3091
R3032
C3023
C3026
C3025
Q3006
C3024
C3022
TP8001
R3004
C3150
R3006
R3005
VR3001
R3033
DOC
R3082
R3002
C3076
R3007
R3001
C8007
R8015
VR8007
AFC
C8006
R8018
R8017
C8009
VR8001
REC . C
C8023
C8024
C8045
C8021
R8013
C8016
C8026
C8035
C8034
QR8001
FL8009
R8007
TP8602
R8020

(COMPONENT SIDE)



IC3004
IC3003
IC3002
Q3020
Q3006
Q3001
QR3001
QR3008
QR3006
Q8003
Q3002
Q3008
Q3023
Q3021
Q3005
QR8004
QR8001
QR8005
QR8006
QR8007
VR3001
/DOC
VR3003
E/EY
VR3004
P.B Y
VR3002
REC Y
VR3005
RF FREQ
VR8001
REC C
VR8007
AFC
TP3001
TP3004
TP3005
TP3006
TP8001
TP8002
TP8003
TP8004
P3001
P3002
DL8001
FL3001
FL3003
FL8002
FL8008
FL8009
L3002
L3007
L3008
L3020
L8013
L8014
L8015
L8018
D3003
D3004
D3005
D3006
IC8001
4
5
6
7
8
9
10

(FOIL SIDE)

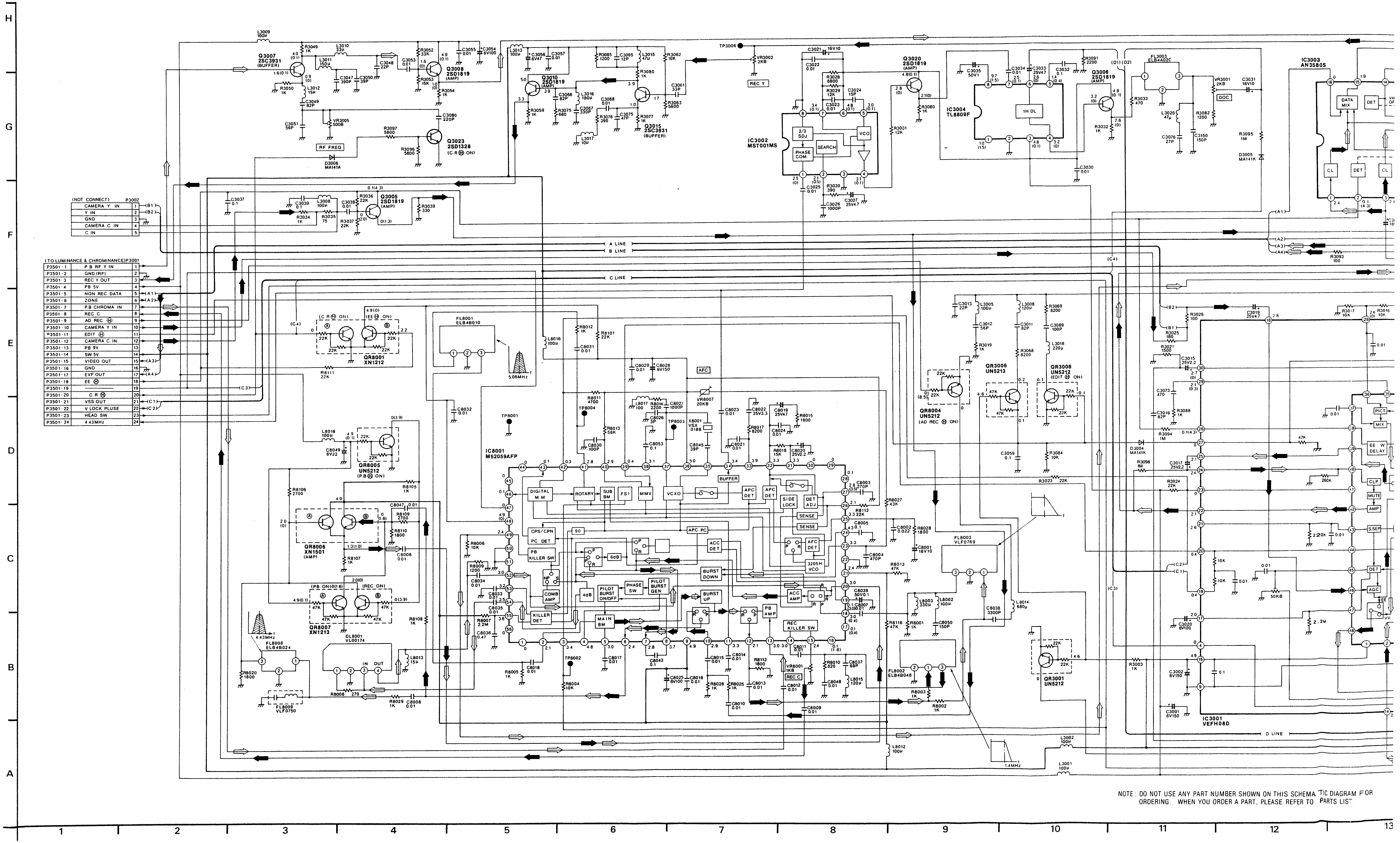
LUMINANCE & CHROMINANCE C.B.A.		
Transistor		
Q3001	D-8	Ⓕ
Q3002	D-10	Ⓕ
Q3003	D-10	Ⓕ
Q3005	B-5	©
Q3006	E-7	Ⓕ
Q3007	C-1	©
Q3008	C-9	Ⓕ
Q3010	D-1	©
Q3012	E-2	©
Q3013	E-3	©
Q3014	E-2	©
Q3015	D-1	©
Q3020	E-5	©
Q3021	B-9	Ⓕ
Transistor & Resistor		
QR3001	D-8	Ⓕ
QR3006	E-10	Ⓕ
QR3008	E-10	Ⓕ
QR8001	B-8	Ⓕ
QR8004	D-5	©
QR8005	A-5	©
QR8006	A-5	©
QR8007	A-5	©
Integrated Circuit		
IC3001	E-3	©
IC3002	E-7	Ⓕ
IC3003	B-2	©
IC3004	E-5	©
IC8001	B-4	©
Test Point		
TP3001	D-9	Ⓕ
TP3004	D-8	Ⓕ
TP3005	E-9	Ⓕ
TP3006	D-9	Ⓕ
TP8001	E-6	Ⓕ
TP8002	A-7	Ⓕ
TP8003	B-8	Ⓕ
TP8004	A-8	Ⓕ
Adjustment		
VR3001	E-8	Ⓕ
VR3002	D-10	Ⓕ
VR3003	E-8	Ⓕ
VR3004	D-10	Ⓕ
VR3005	C-10	Ⓕ
VR8001	B-7	Ⓕ
VR8007	C-7	Ⓕ
Connector		
P3001	A-2	©
P3001	A-9	Ⓕ
P3002	B-1	©
P3002	B-10	Ⓕ

ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

3-26. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAY

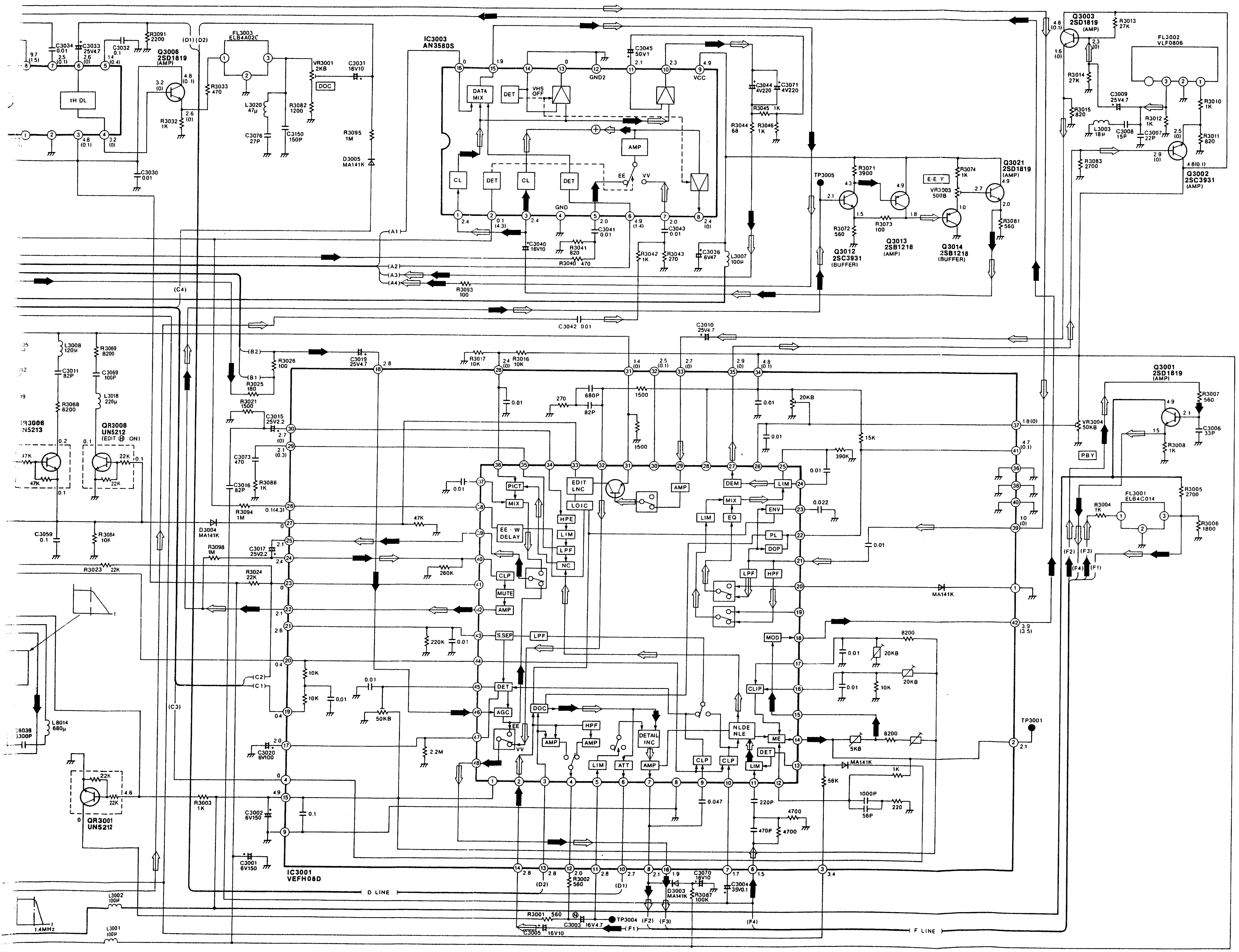


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
(NOT CONNECT) P3002
CAMERA Y IN 1 (B1)
Y IN 2 (B2)
GND 3
CAMERA C IN 4
C IN 5
(TO LUMINANCE & CHROMINANCE)P3001
P3501·1 P.B RF Y IN 1
P3501·2 GND (RF) 2
P3501·3 REC Y OUT 3
P3501·4 PB 5V 4
P3501·5 NON REC DATA 5 (A1)
P3501·6 ZONE 6 (A2)
P3501·7 P.B CHROMA IN 7
P3501·8 REC C 8
P3501·9 AD REC Ⓗ 9
P3501·10 CAMERA Y IN 10
P3501·11 EDIT Ⓗ 11
P3501·12 CAMERA C IN 12
P3501·13 PB 9V 13
P3501·14 SW 5V 14
P3501·15 VIDEO OUT 15 (A3)
P3501·16 GND 16
P3501·17 EVF OUT 17 (A4)
P3501·18 EE Ⓗ 18
P3501·19 19
P3501·20 C.R Ⓗ 20
P3501·21 VSS OUT 21 (C1)
P3501·22 V LOCK PLUSE 22 (C2)
P3501·23 HEAD SW 23
P3501·24 4.43MHz 24
Q3007 2SC3931 (BUFFER)
Q3008 2SD1819 (AMP)
Q3023 2SD1328 (C.R Ⓗ:ON)
RF FREQ
D3006 MA141A
Q3005 2SD1819 (AMP)
Q3010 2SD1819 (AMP)
Q3015 2SC3931 (BUFFER)
TP3006
VR3002 2KB
REC Y
IC3002 MST001MS
2/3 SDJ
PHASE COM.
SEARCH
VCO
Q3020 2SD1819 (AMP)
IC3004 TL8809F
1H DL
Q3006 2SD1819 (AMP)
FL3003 ELB4A02C
VR3001 2KB
DOC
D3005 MA141K
IC3003 AN3580S
DATA MIX
DET
CL
A LINE
B LINE
C LINE
D LINE
QR8001 XN1212
(C.R Ⓗ ON)
(EE Ⓗ ON)
FL8001 ELB4B010
5.06MHz
AFC
VR8007 20KB
TP8001
TP8003
TP8004
X8001 VSX 0188
QR8005 UN5212 (P.B Ⓗ:ON)
IC8001 M52059AFP
DIGITAL M.M
ROTARY
SUB BM
FSI
MMV
VCXO
BUFFER
APC DET
SIDE LOCK
DET ADJ
SENSE
CPS/CPN
PC DET
PB KILLER SW
90
APC PC
ACC DET
AFC DET
3205H VCO
6dB
COMB AMP
4dB
PILOT BURST ON/OFF
PHASE SW
PILOT BURST GEN
BURST DOWN
BURST UP
ACC AMP
KILLER DET
MAIN BM
PB AMP
REC KILLER SW
QR8006 XN1501 (AMP)
QR8007 XN1213
(PB ON)
(REC ON)
4.43MHz
FL8008 ELB4B024
FL8009 VLF0750
DL8001 VL00174
IN OUT
TP8002
VR8001 1KB
REC C
QR8004 UN5212 (AD REC Ⓗ ON)
QR3006 UN5213
QR3008 UN5212 (EDIT Ⓗ ON)
FL8003 VLF0769
FL8002 ELB4B048
1.4MHz
QR3001 UN5212
D3004 MA141K
IC3001 VEFH08D
PICT
MIX
EE W DELAY
CLP
MUTE
AMP
SSEP
DET
AGC

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

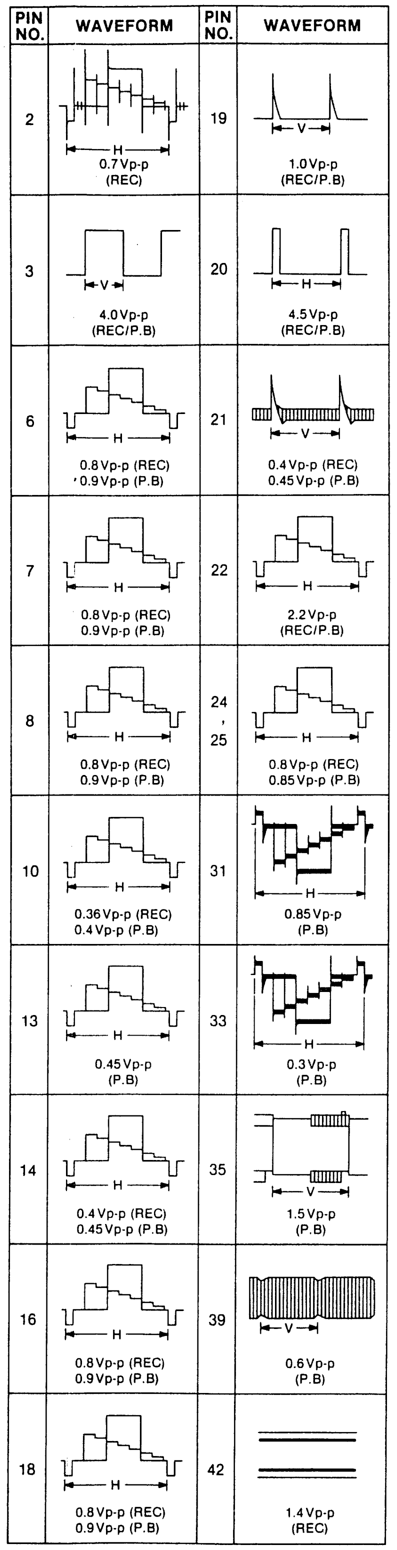

IC3003
AN3580S
IC3001
VEFH08D
Q3006 2SD1819 (AMP)
FL3003 ELB4A02C
VR3001 2KB
DOC
D3005 MA141K
Q3003 2SD1819 (AMP)
FL3002 VLF0806
Q3021 2SD1819 (AMP)
Q3002 2SC3931 (AMP)
Q3012 2SC3931 (BUFFER)
Q3013 2SB1218 (AMP)
Q3014 2SB1218 (BUFFER)
TP3005
E-E V
VR3003 500B
Q3001 2SD1819 (AMP)
VR3004 50KB
PBY
FL3001 ELB4C014
QR3008 UN5212 (EDIT ON)
QR3001 UN5212
D3004 MA141K
TP3001
TP3004
D3003 MA141K
L3007 100μ
1H DL
DATA MIX
DET
VHS OFF
AMP
CL
EE
VV
GND
GND2
VCC
PICT
MIX
EDIT LNC
LOLC
HPE
LIM
LPF
NC
EE·W DELAY
CLP
MUTE
SSEP
AGC
DOC
HPF
DETAIL INC
ATT
DEM
EQ
ENV
PL
DOP
MOD
CLIP
NLDE NLE
ME
D LINE
F LINE
(A1)
(A2)
(A3)
(A4)
(B1)
(B2)
(C1)
(C2)
(C3)
(C4)
(D1)
(D2)
(F1)
(F2)
(F3)
(F4)
1.4MHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

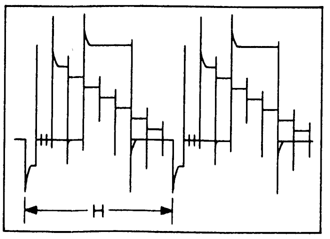
10 11 12 13 14 15 16 17 18

IC3001 (VEFH08D)

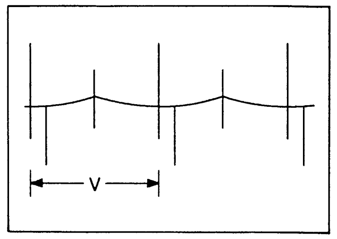


PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
2	0.7Vp-p (REC)	19	1.0Vp-p (REC/P.B)
3	4.0Vp-p (REC/P.B)	20	4.5Vp-p (REC/P.B)
6	0.8Vp-p (REC) 0.9Vp-p (P.B)	21	0.4Vp-p (REC) 0.45Vp-p (P.B)
7	0.8Vp-p (REC) 0.9Vp-p (P.B)	22	2.2Vp-p (REC/P.B)
8	0.8Vp-p (REC) 0.9Vp-p (P.B)	24, 25	0.8Vp-p (REC) 0.85Vp-p (P.B)
10	0.36Vp-p (REC) 0.4Vp-p (P.B)	31	0.85Vp-p (P.B)
13	0.45Vp-p (P.B)	33	0.3Vp-p (P.B)
14	0.4Vp-p (REC) 0.45Vp-p (P.B)	35	1.5Vp-p (P.B)
16	0.8Vp-p (REC) 0.9Vp-p (P.B)	39	0.6Vp-p (P.B)
18	0.8Vp-p (REC) 0.9Vp-p (P.B)	42	1.4Vp-p (REC)

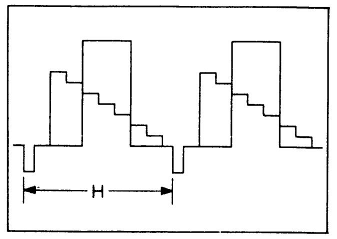
LUMINANCE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 3000 Series)



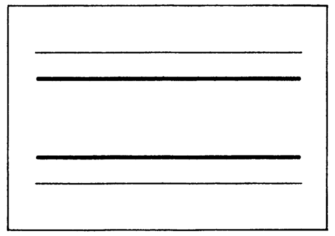
TP3001 REC
0.2V/20μsec. div. 0.7Vp-p



TP3004 PLAY
0.2V/10msec. div. 0.6Vp-p

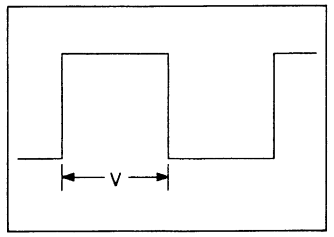


TP3005 REC/PLAY
0.5V/20μsec. div. 1.2Vp-p

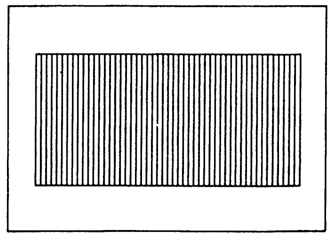


TP3006 REC
0.5V/20μsec. div. 1.4Vp-p

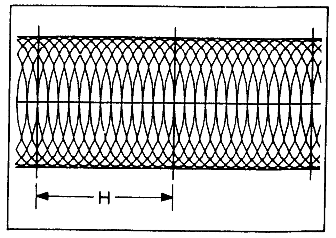
CHROMINANCE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 8000 Series)



TP8002 REC/PLAY
0.2V/10msec. div. 0.4Vp-p

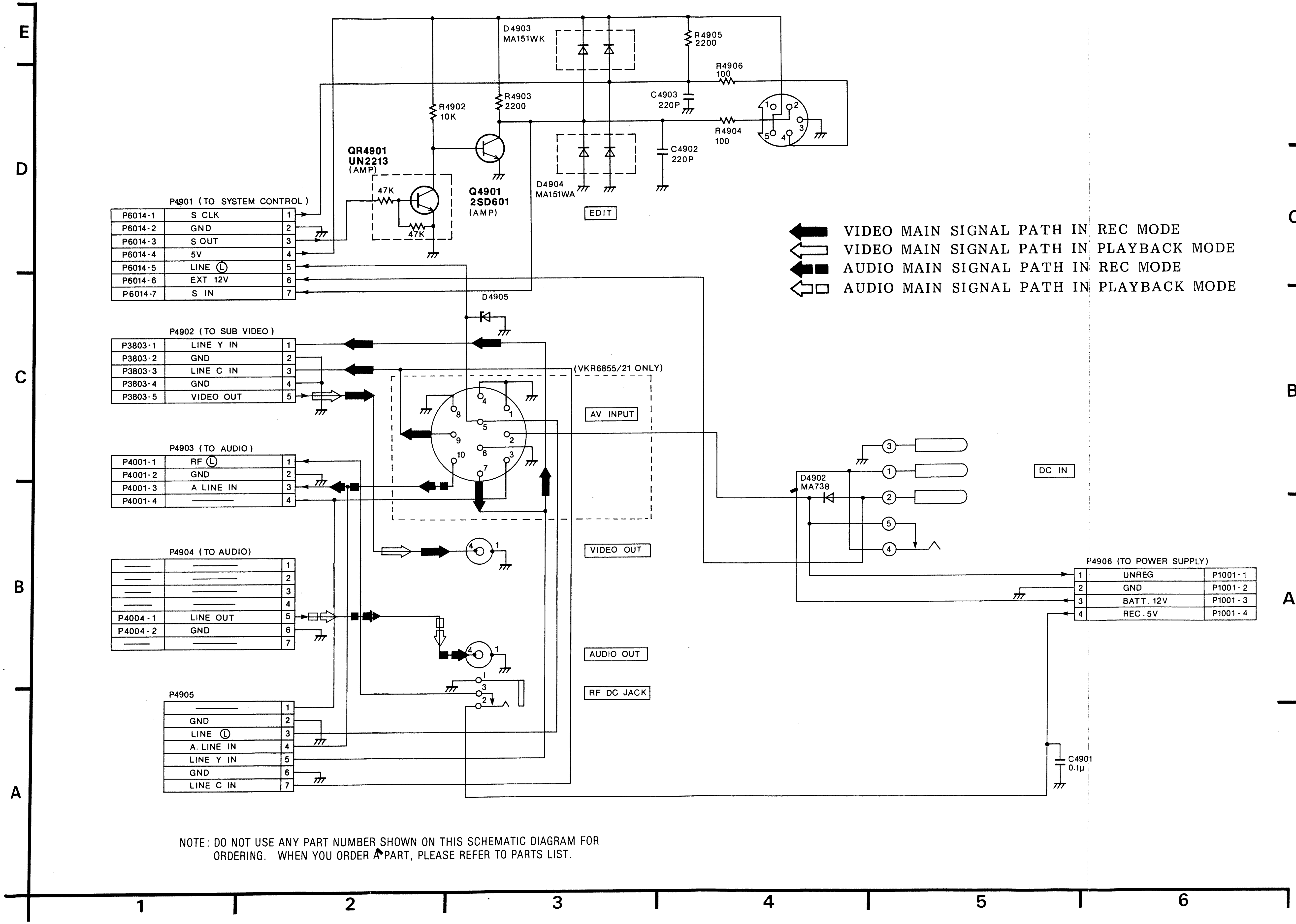


TP8003 0.2V/20μsec. div.
REC: 0.51Vp-p
PLAY: 0.62Vp-p



TP8004 REC/PLAY
0.5V/20μsec. div. 1.1Vp-p

3-27. VTR JACK SCHEMATIC DIAGRAM

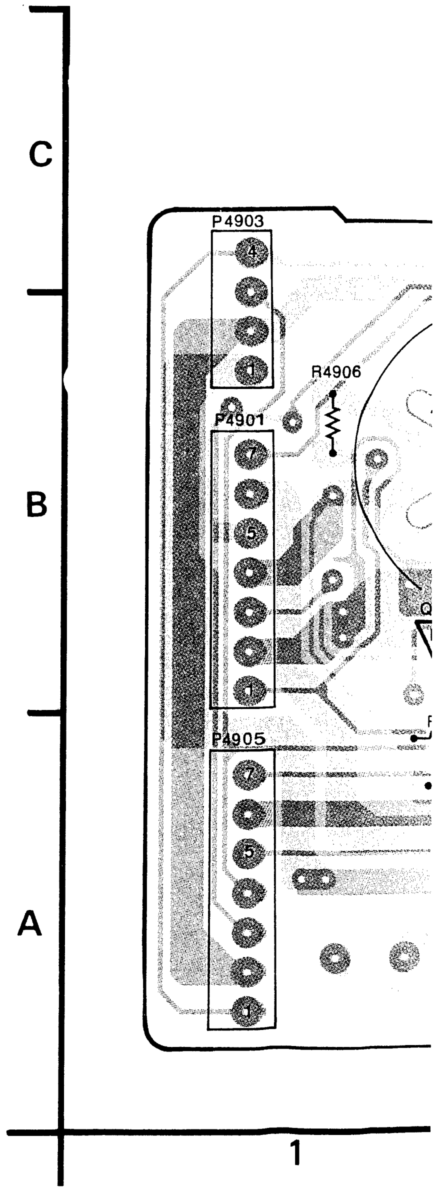

E
D
C
B
A
D4903
MA151WK
R4905
2200
R4906
100
C4903
220P
R4903
2200
R4902
10K
R4904
100
C4902
220P
QR4901
UN2213
(AMP)
47K
47K
Q4901
2SD601
(AMP)
D4904
MA151WA
EDIT
P4901 (TO SYSTEM CONTROL)
P6014-1 S CLK 1
P6014-2 GND 2
P6014-3 S OUT 3
P6014-4 5V 4
P6014-5 LINE Ⓛ 5
P6014-6 EXT 12V 6
P6014-7 S IN 7
D4905
P4902 (TO SUB VIDEO)
P3803-1 LINE Y IN 1
P3803-2 GND 2
P3803-3 LINE C IN 3
P3803-4 GND 4
P3803-5 VIDEO OUT 5
(VKR6855/21 ONLY)
AV INPUT
P4903 (TO AUDIO)
P4001-1 RF Ⓛ 1
P4001-2 GND 2
P4001-3 A LINE IN 3
P4001-4 ——— 4
P4904 (TO AUDIO)
P4004-1 LINE OUT 5
P4004-2 GND 6
P4905
GND 2
LINE Ⓛ 3
A. LINE IN 4
LINE Y IN 5
GND 6
LINE C IN 7
VIDEO OUT
AUDIO OUT
RF DC JACK
D4902
MA738
DC IN
P4906 (TO POWER SUPPLY)
1 UNREG P1001-1
2 GND P1001-2
3 BATT. 12V P1001-3
4 REC. 5V P1001-4
C4901
0.1μ
1
2
3
4
5
6

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

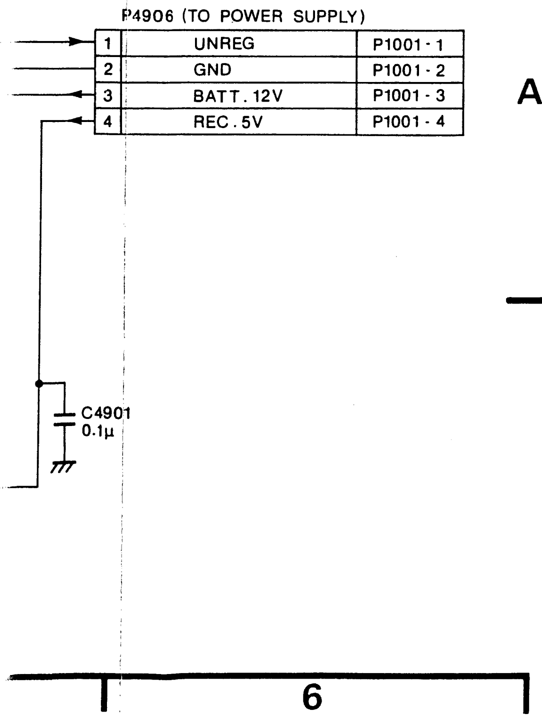
Back Page:
LUMINANCE & CHROMINANCE Section

3-28. VTR JACK C.B


P4903
R4906
P4901
P4905
C
B
A
1

ATH IN REC MODE
ATH IN PLAYBACK MODE
ATH IN REC MODE
ATH IN PLAYBACK MODE

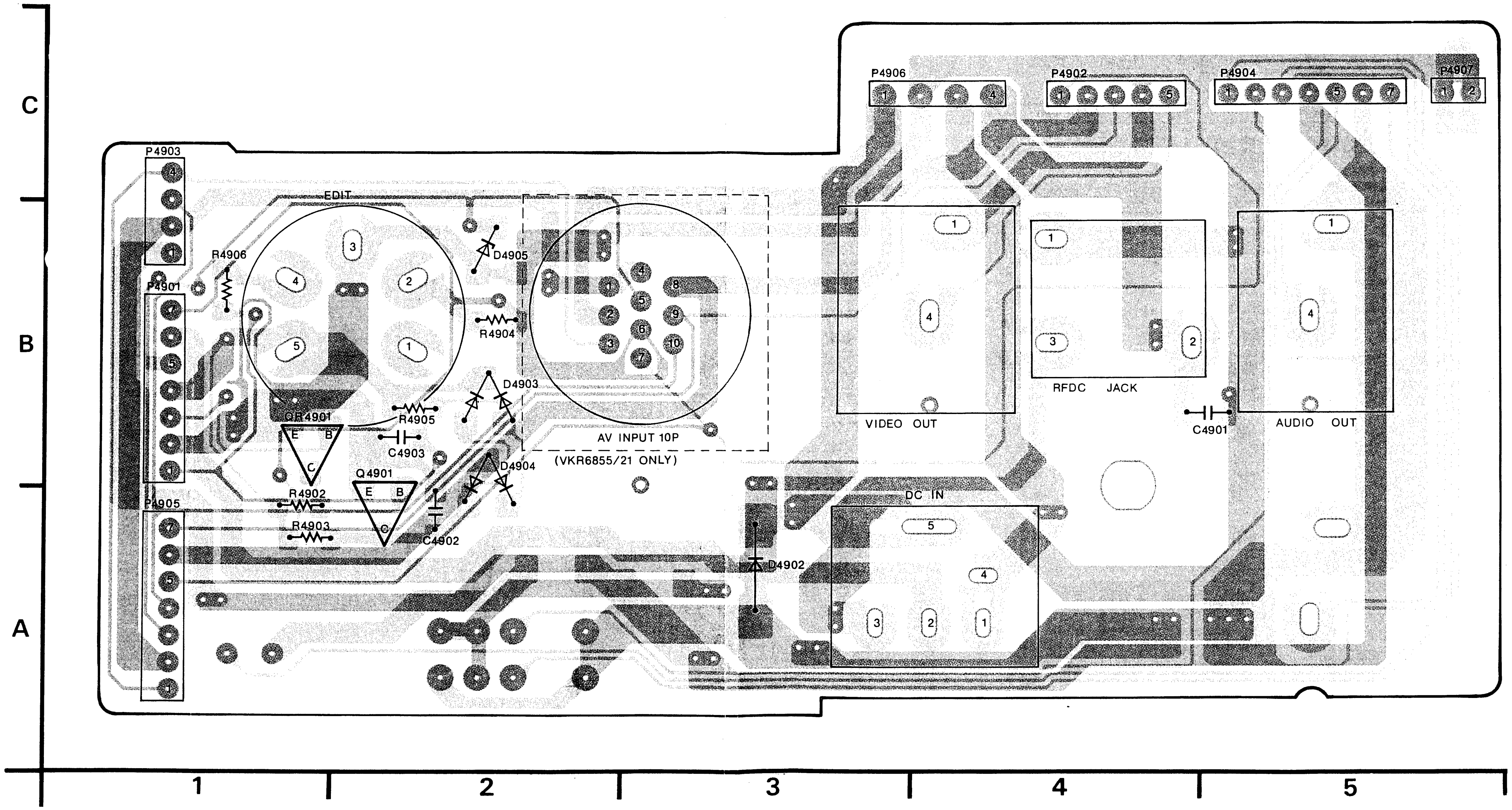
DC IN



P4906 (TO POWER SUPPLY)

1	UNREG	P1001 - 1
2	GND	P1001 - 2
3	BATT. 12V	P1001 - 3
4	REC. 5V	P1001 - 4

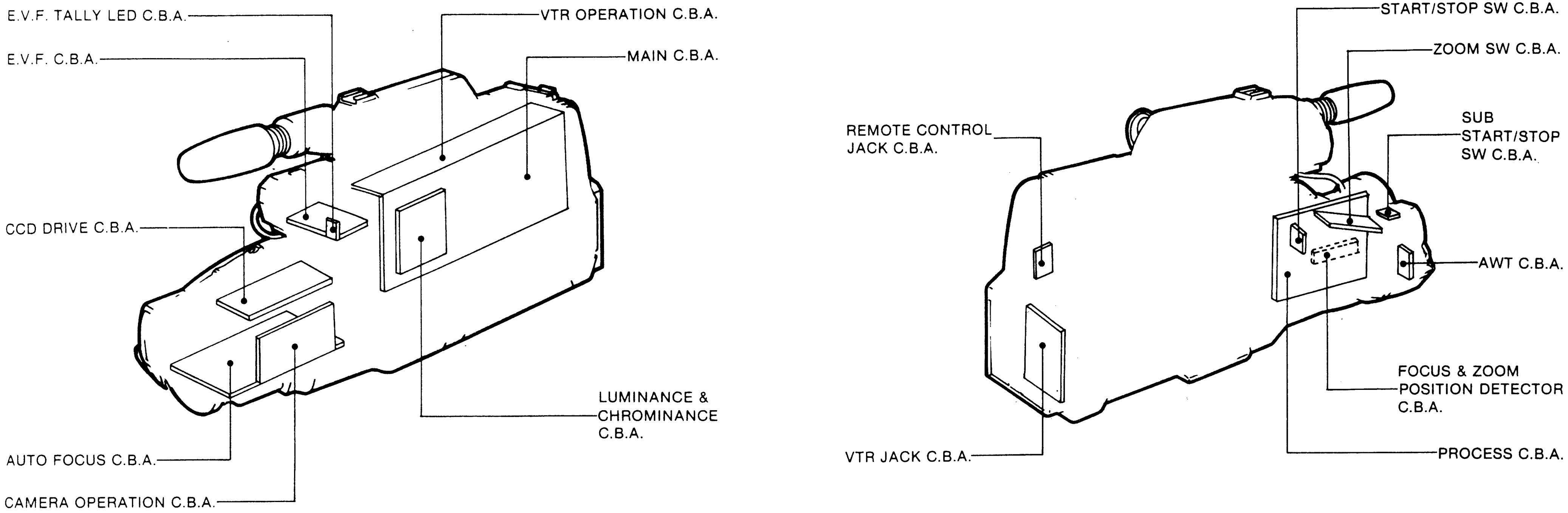
3-28. VTR JACK C.B.A.


C
B
A
1
2
3
4
5
P4903
P4901
P4905
P4906
P4902
P4904
P4907
EDIT
R4906
D4905
R4904
D4903
R4905
C4903
QR4901
E
B
C
Q4901
R4902
R4903
C4902
D4904
AV INPUT 10P
(VKR6855/21 ONLY)
VIDEO OUT
RFDC JACK
C4901
AUDIO OUT
DC IN
D4902

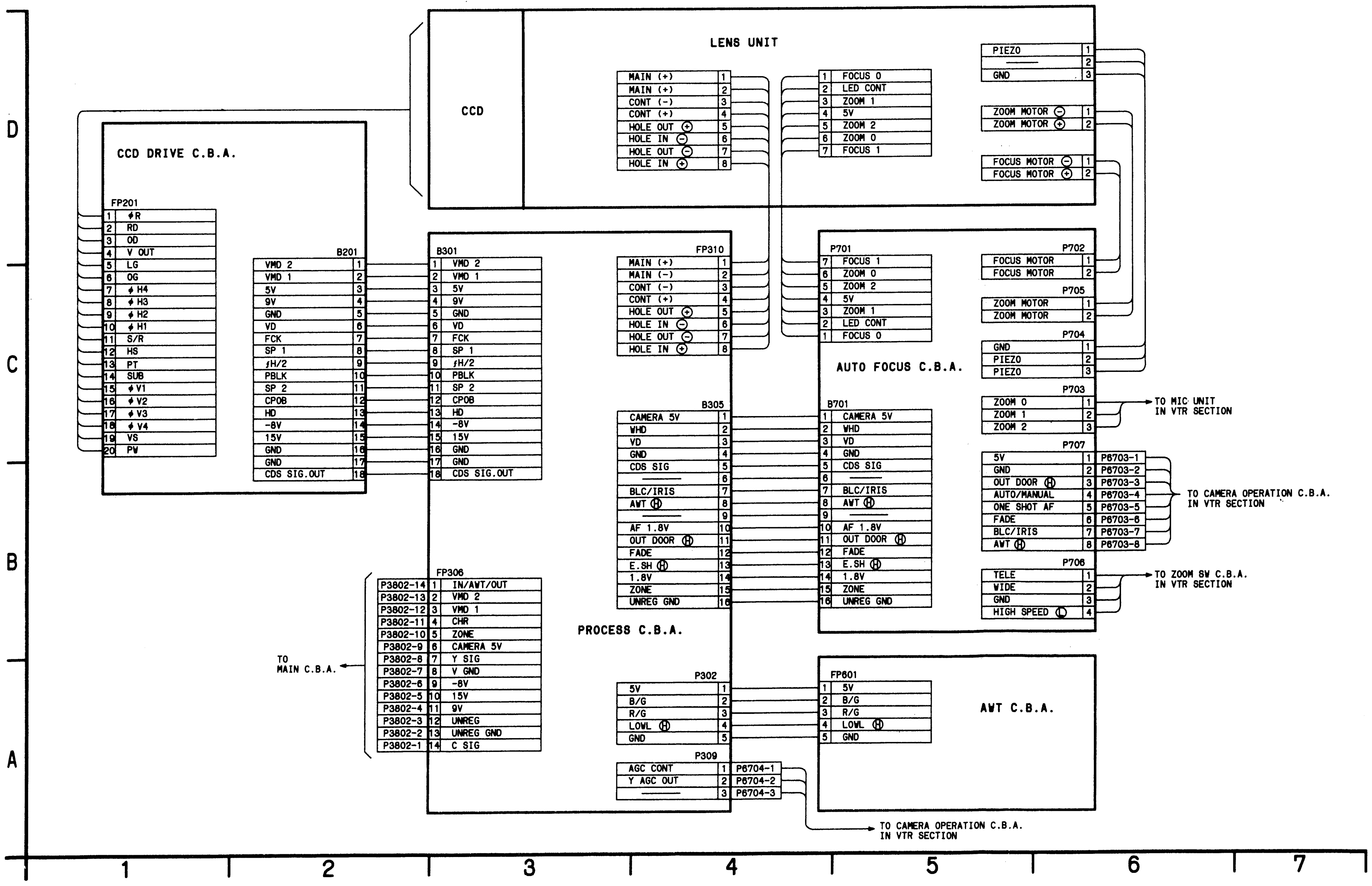
VTR JACK C.B.A.	
Transistor	
Q4901	B-2
Transistor & Resistor	
QR4901	B-2
Connector	
P4901	B-1
P4902	C-4
P4903	C-1
P4904	C-5
P4905	A-1
P4906	C-3
P4907	C-5

ADDRESS INFORMATION

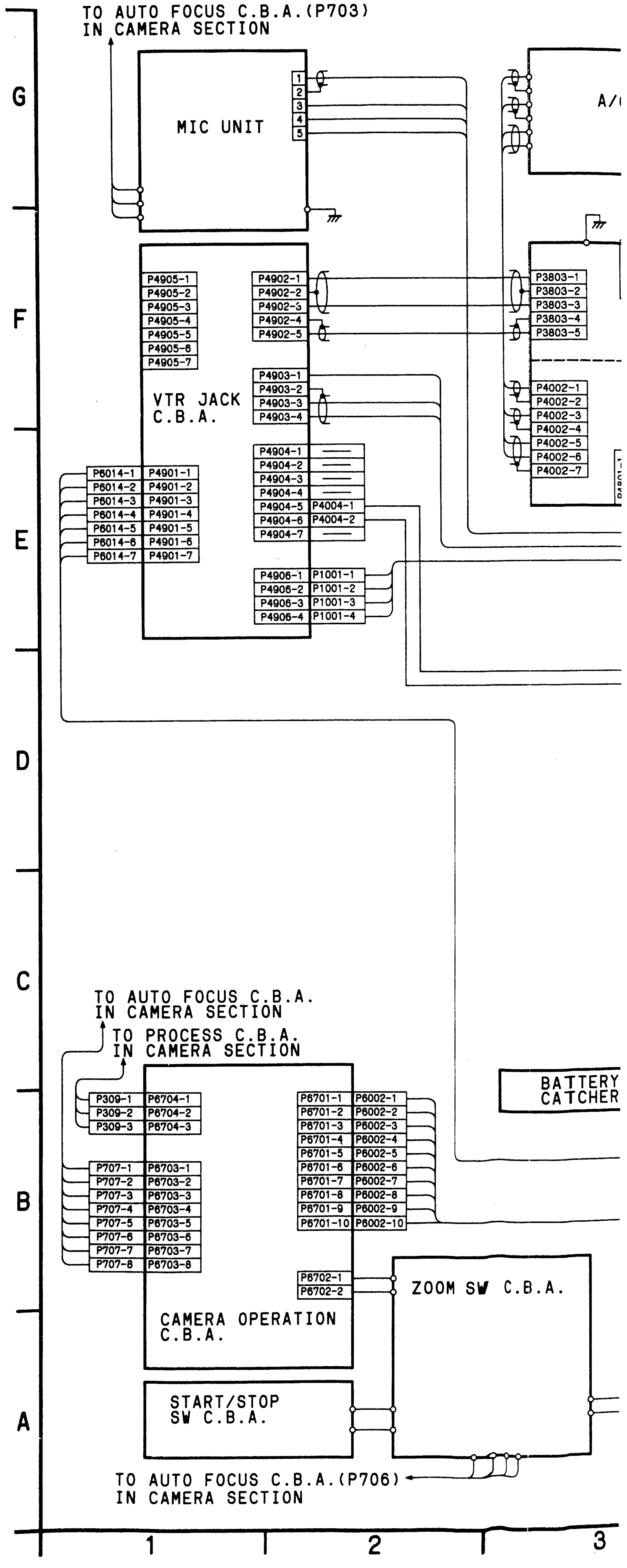
3-29. CIRCUIT BOARD LAYOUT


E.V.F. TALLY LED C.B.A.
E.V.F. C.B.A.
VTR OPERATION C.B.A.
MAIN C.B.A.
CCD DRIVE C.B.A.
LUMINANCE & CHROMINANCE C.B.A.
AUTO FOCUS C.B.A.
CAMERA OPERATION C.B.A.
REMOTE CONTROL JACK C.B.A.
VTR JACK C.B.A.
START/STOP SW C.B.A.
ZOOM SW C.B.A.
SUB START/STOP SW C.B.A.
AWT C.B.A.
FOCUS & ZOOM POSITION DETECTOR C.B.A.
PROCESS C.B.A.

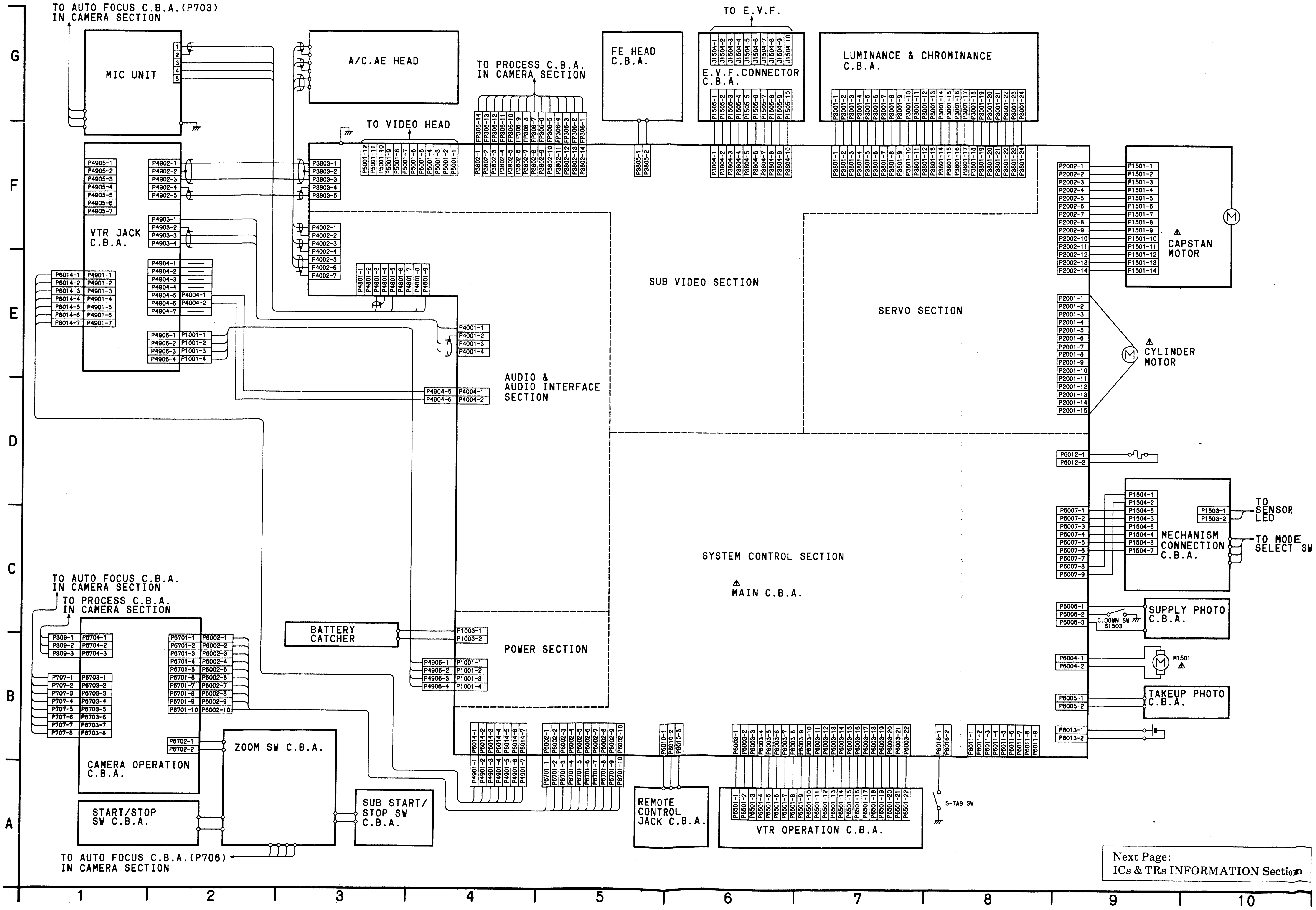
3-30. CAMERA INTERCONNECTION SCHEMATIC DIAGRAM


LENS UNIT
CCD
CCD DRIVE C.B.A.
FP201
B201
B301
FP310
B305
FP306
P302
P309
P701
P702
P705
P704
P703
P707
P706
B701
FP601
PROCESS C.B.A.
AUTO FOCUS C.B.A.
AWT C.B.A.
PIEZO
GND
ZOOM MOTOR
FOCUS MOTOR
MAIN (+)
MAIN (−)
CONT (−)
CONT (+)
HOLE OUT
HOLE IN
FOCUS 0
LED CONT
ZOOM 1
5V
ZOOM 2
ZOOM 0
FOCUS 1
VMD 2
VMD 1
9V
VD
FCK
SP 1
fH/2
PBLK
SP 2
CPOB
HD
−8V
15V
CDS SIG.OUT
CAMERA 5V
WHD
CDS SIG
BLC/IRIS
AWT
AF 1.8V
OUT DOOR
FADE
E.SH
1.8V
ZONE
UNREG GND
AUTO/MANUAL
ONE SHOT AF
TELE
WIDE
HIGH SPEED
B/G
R/G
LOWL
AGC CONT
Y AGC OUT
P6704-1
P6704-2
P6704-3
IN/AWT/OUT
CHR
Y SIG
V GND
UNREG
C SIG
TO MAIN C.B.A.
TO MIC UNIT IN VTR SECTION
TO CAMERA OPERATION C.B.A. IN VTR SECTION
TO ZOOM SW C.B.A. IN VTR SECTION
1
2
3
4
5
6
7
A
B
C
D

3-31. VTR INTERCONNECTION SCHEM

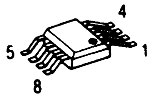

TO AUTO FOCUS C.B.A.(P703) IN CAMERA SECTION
MIC UNIT
A/
VTR JACK C.B.A.
P4905
P4902
P4903
P4904
P4906
P4901
P6014
P3803
P4002
P4004
P1001
TO AUTO FOCUS C.B.A. IN CAMERA SECTION
TO PROCESS C.B.A. IN CAMERA SECTION
P309
P707
P6704
P6703
P6701
P6002
P6702
BATTERY CATCHER
ZOOM SW C.B.A.
CAMERA OPERATION C.B.A.
START/STOP SW C.B.A.
TO AUTO FOCUS C.B.A.(P706) IN CAMERA SECTION
G
F
E
D
C
B
A
1
2
3

3-31. VTR INTERCONNECTION SCHEMATIC DIAGRAM

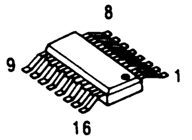

TO AUTO FOCUS C.B.A.(P703) IN CAMERA SECTION
MIC UNIT
A/C.AE HEAD
TO PROCESS C.B.A. IN CAMERA SECTION
FE HEAD C.B.A.
TO E.V.F.
E.V.F.CONNECTOR C.B.A.
LUMINANCE & CHROMINANCE C.B.A.
TO VIDEO HEAD
VTR JACK C.B.A.
SUB VIDEO SECTION
SERVO SECTION
CAPSTAN MOTOR
CYLINDER MOTOR
AUDIO & AUDIO INTERFACE SECTION
SYSTEM CONTROL SECTION
MAIN C.B.A.
MECHANISM CONNECTION C.B.A.
TO SENSOR LED
TO MODE SELECT SW
SUPPLY PHOTO C.B.A.
C.DOWN SW S1503
M1501
TAKEUP PHOTO C.B.A.
TO AUTO FOCUS C.B.A. IN CAMERA SECTION
TO PROCESS C.B.A. IN CAMERA SECTION
BATTERY CATCHER
POWER SECTION
CAMERA OPERATION C.B.A.
ZOOM SW C.B.A.
START/STOP SW C.B.A.
SUB START/STOP SW C.B.A.
REMOTE CONTROL JACK C.B.A.
VTR OPERATION C.B.A.
S-TAB SW
TO AUTO FOCUS C.B.A.(P706) IN CAMERA SECTION
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

Next Page:
ICs & TRs INFORMATION Section

3-32. ICs & TRs INFORMATION



AN1358S
AN6562S
AN1358S
AN6914S
µPC1513G
NJM3415M
MST001MS
TL8809F
LM2964M
RC4558M



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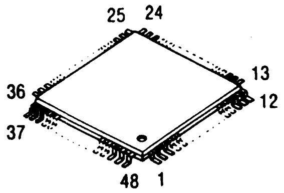
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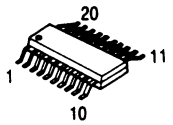

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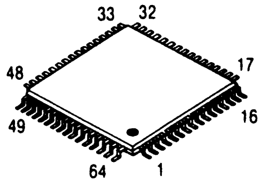
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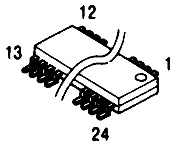

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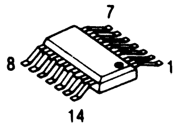

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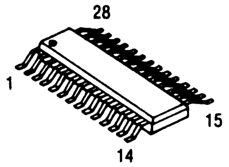

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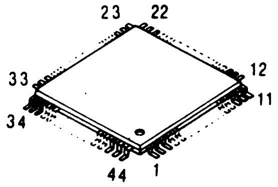
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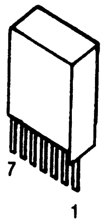

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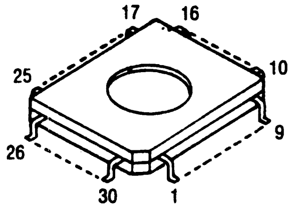
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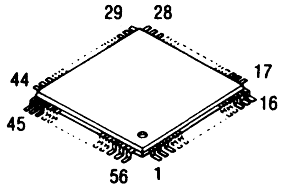
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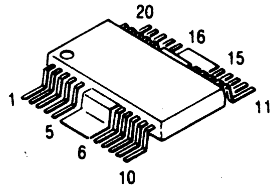
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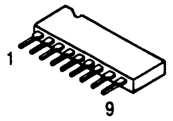

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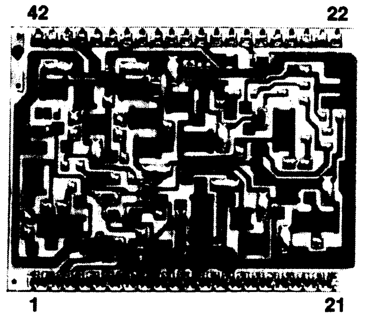

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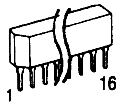

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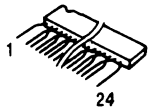

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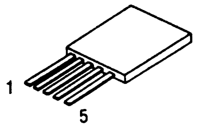

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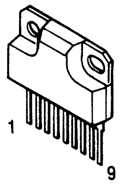

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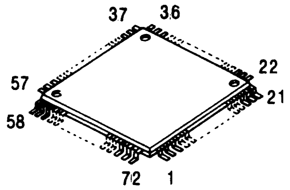
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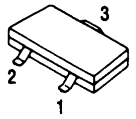

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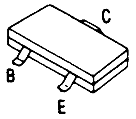

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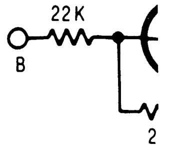

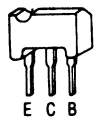

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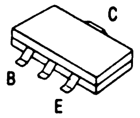

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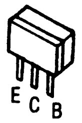

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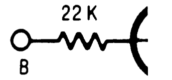

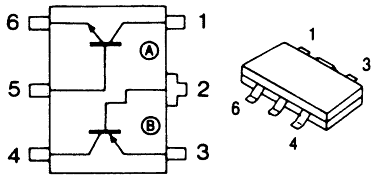
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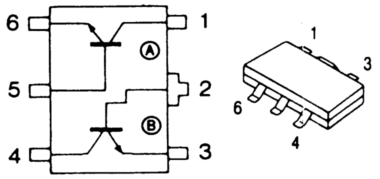
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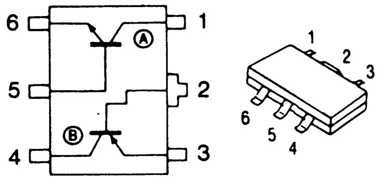
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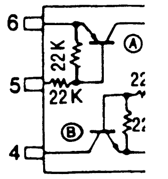

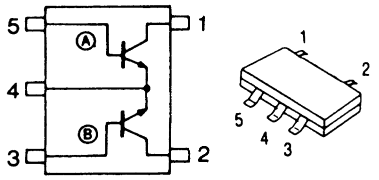
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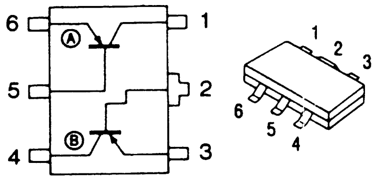
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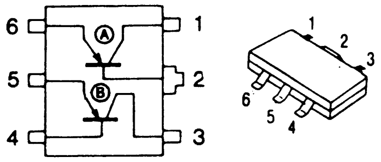
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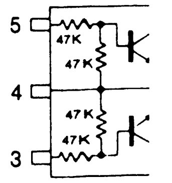
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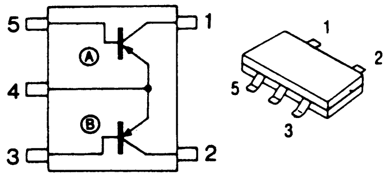

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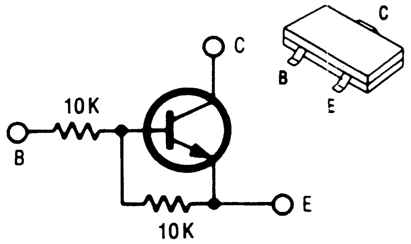
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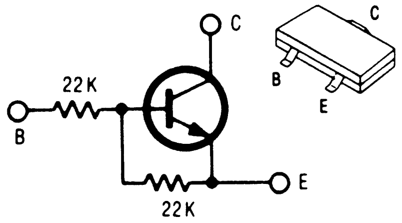
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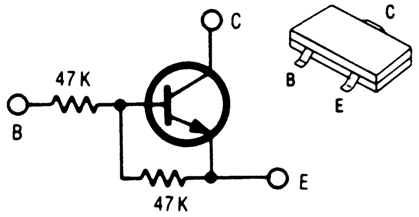
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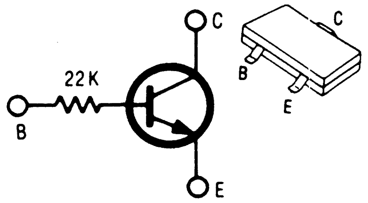

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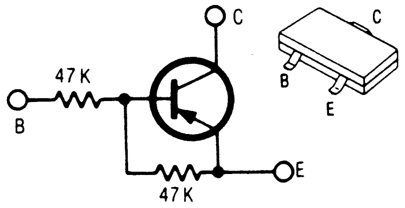
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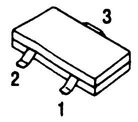

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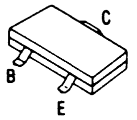

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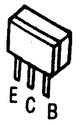

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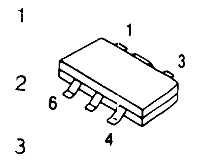

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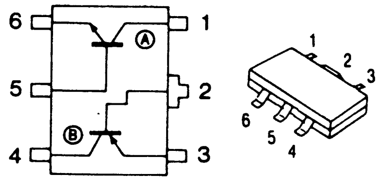
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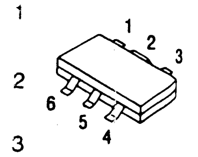

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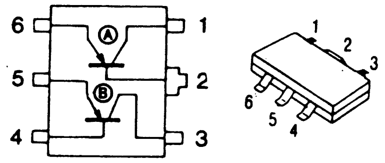
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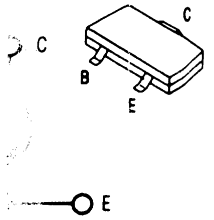

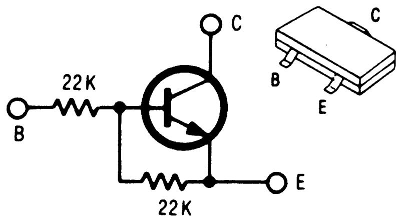
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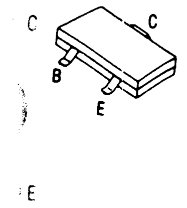

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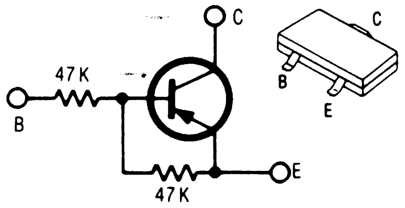
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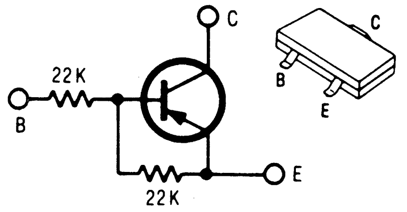
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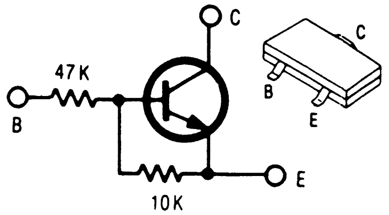
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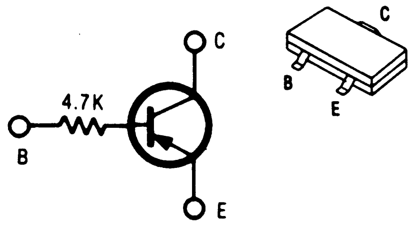

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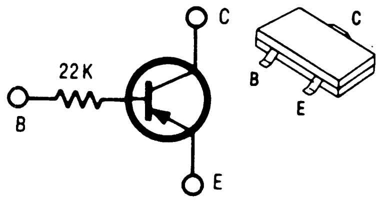

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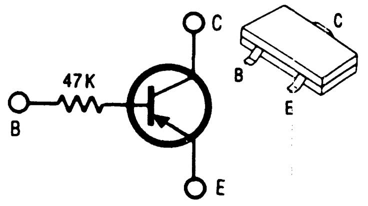

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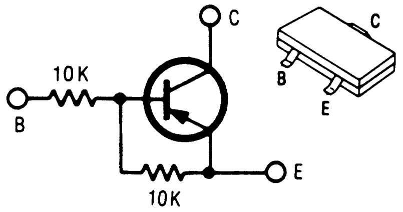
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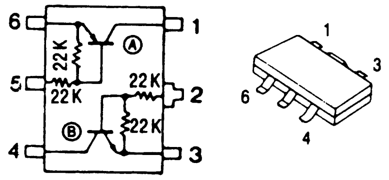
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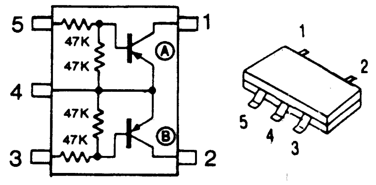
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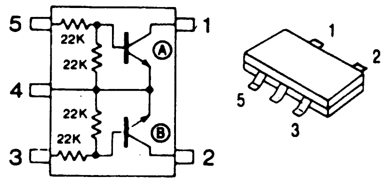
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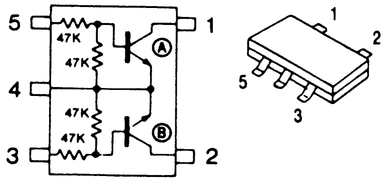
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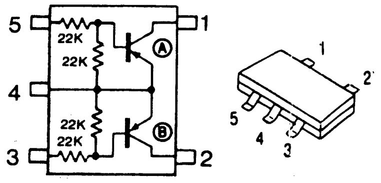
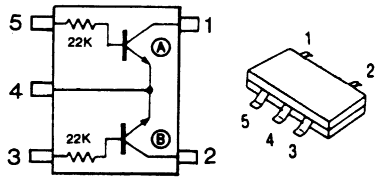
47K
47K
47K
47K
Ⓐ
Ⓑ
1
2
5
3

XN1213
FMG2


5
4
3
1
2
22K
22K
22K
22K
Ⓐ
Ⓑ
1
2
5
4
3

XN1112
FMA1

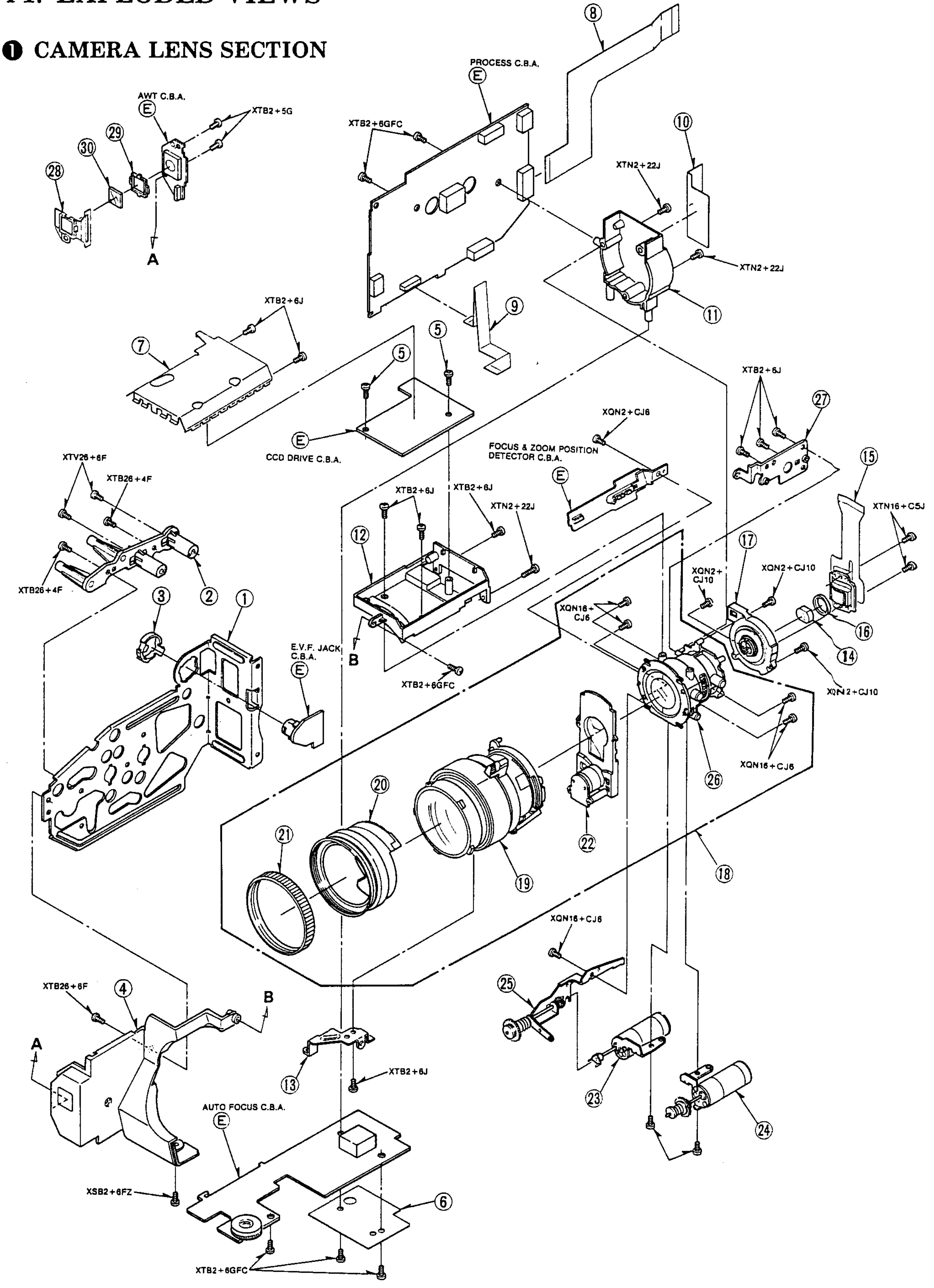

5
4
3
1
2
22K
22K
Ⓐ
Ⓑ
1
2
5
4
3

XN1217

SECTION 4
EXPLODED VIEWS & PARTS LIST

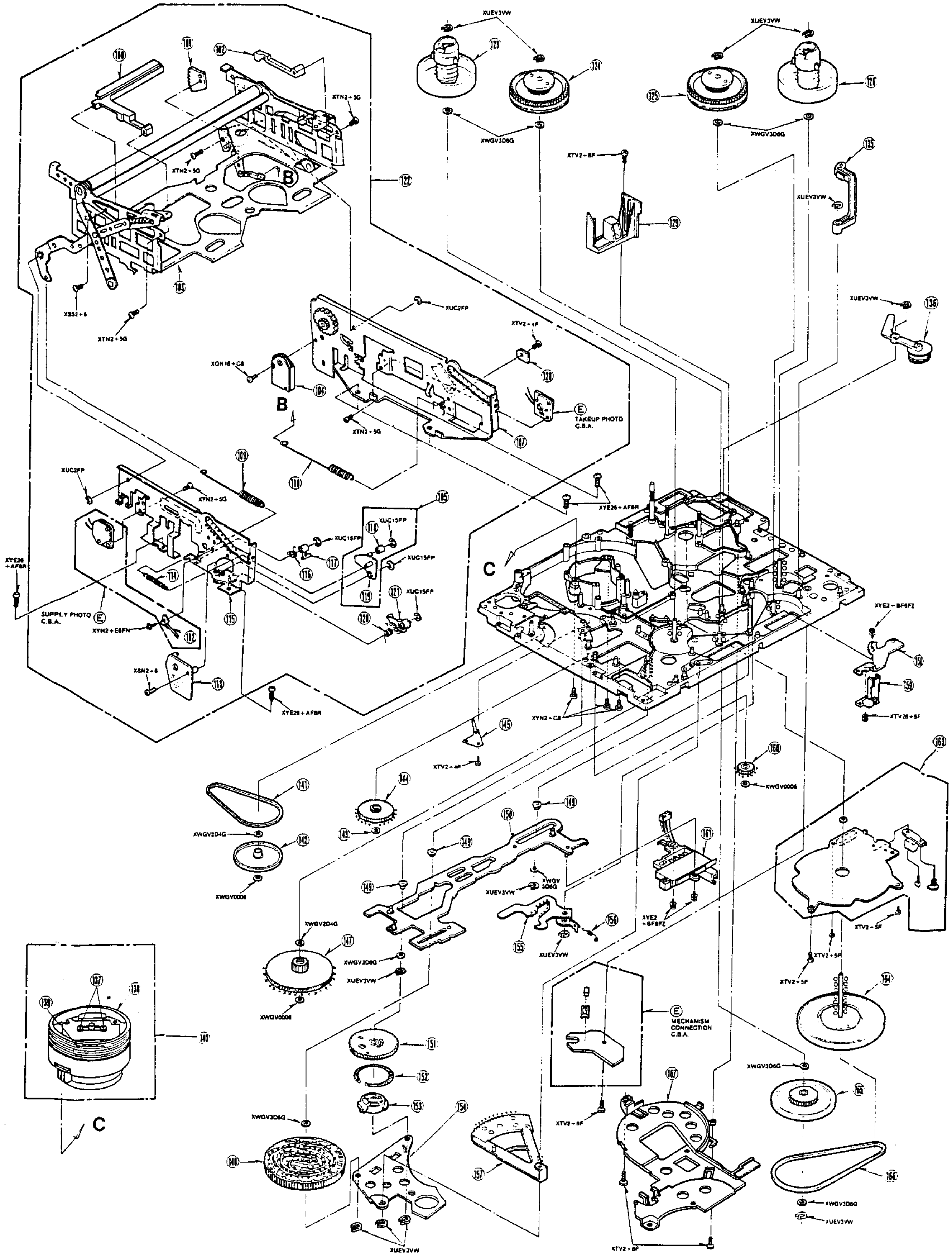
4-1. EXPLODED VIEWS

❶ CAMERA LENS SECTION

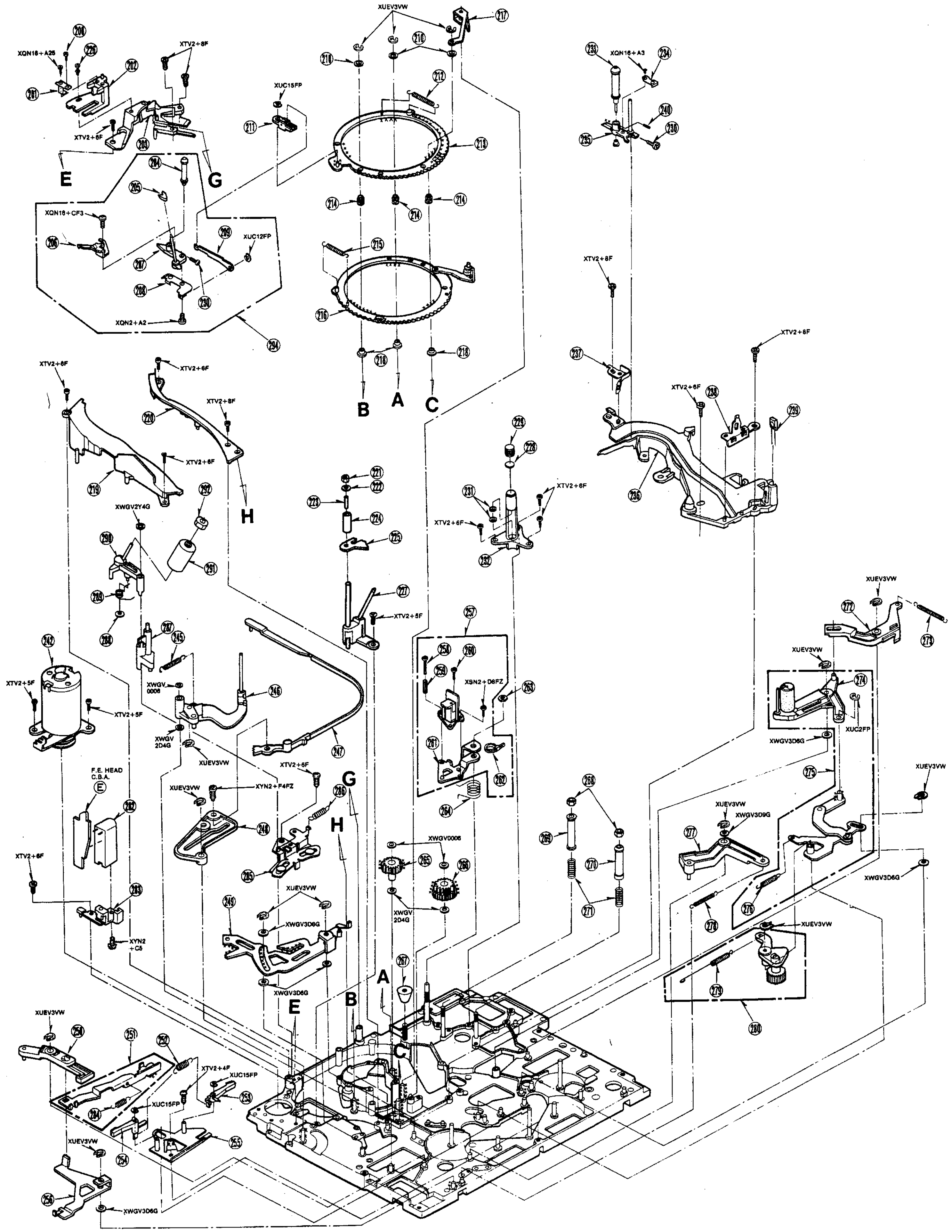


⑧
PROCESS C.B.A.
Ⓔ
AWT C.B.A.
Ⓔ
XTB2+5G
XTB2+6GFC
㉙
㉚
㉘
A
⑩
XTN2+22J
XTN2+22J
⑪
XTB2+6J
⑦
⑨
⑤
⑤
Ⓔ
CCD DRIVE C.B.A.
XTB2+6J
㉗
XQN2+CJ6
FOCUS & ZOOM POSITION DETECTOR C.B.A.
Ⓔ
⑮
XTV26+6F
XTB26+4F
XTB26+4F
XTB2+6J
XTB2+6J
XTN2+22J
⑫
XTN16+C5J
⑰
XQN2+CJ10
XQN2+CJ10
②
③
①
XQN16+CJ6
⑯
⑭
E.V.F. JACK C.B.A.
Ⓔ
B
XTB2+6GFC
XQN2+CJ10
XQN16+CJ6
㉖
⑳
㉑
㉒
⑲
⑱
XQN16+CJ6
㉕
XTB26+6F
④
B
A
⑬
XTB2+6J
㉓
㉔
AUTO FOCUS C.B.A.
Ⓔ
XSB2+6FZ
⑥
XTB2+6GFC

❷ MECHANISM SECTION (1)


100
101
102
XTN2 + 5G
XTN2 + 5G
B
122
103
XSS2 + 5
XTN2 + 5G
XUEV3VW
123
124
XWGV3D6G
XUEV3VW
125
126
XWGV3D6G
XTV2 + 6F
129
135
XUEV3VW
XUEV3VW
136
XUC2FP
XTV2 + 4F
128
XQN16 + C8
104
B
XTN2 + 5G
E
TAKEUP PHOTO
C.B.A.
107
109
110
XUC2FP
XTN2 + 5G
105
XUC15FP
118
XUC15FP
XUC15FP
117
116
119
121
XUC15FP
120
XYE26 + AF6R
C
XYE26
+ AF6R
114
SUPPLY PHOTO
C.B.A.
E
XYN2 + E6FN
112
115
XSN2 + 6
113
XYE26 + AF6R
XYE2 + BF6FZ
158
159
XTV26 + 6F
XYN2 + C8
145
XTV2 + 4F
160
XWGV0006
163
141
XWGV2D4G
142
XWGV0006
144
143
149
150
149
149
XWGV
3D6G
XUEV3VW
161
XYE2
+ BF9FZ
155
156
XUEV3VW
XWGV2D4G
147
XWGV3D6G
XUEV3VW
XWGV0006
XTV2 + 5F
XTV2 + 5F
XTV2 + 5F
164
137
138
139
140
C
151
152
153
154
E
MECHANISM
CONNECTION
C.B.A.
XWGV3D6G
165
XWGV3D6G
148
157
XTV2 + 6F
167
166
XWGV3D6G
XUEV3VW
XUEV3VW
XTV2 + 6F

❸ MECHANISM SECTION (2)


XUEV3VW
XQN16+A26
XTV2+8F
XUC15FP
XQN16+A3
XTV2+8F
XTV2+6F
XQN16+CF3
XUC12FP
XQN2+A2
XTV2+6F
XWGV2Y4G
XTV2+5F
XWGV 0006
XWGV 204G
F.E. HEAD C.B.A.
XYN2+F4FZ
XYN2 +C5
XWGV3D6G
XSN2+D6FZ
XWGV0006
XUC2FP
XWGV3D9G
XTV2+4F
XUC15FP
A
B
C
E
G
H
210
211
212
213
214
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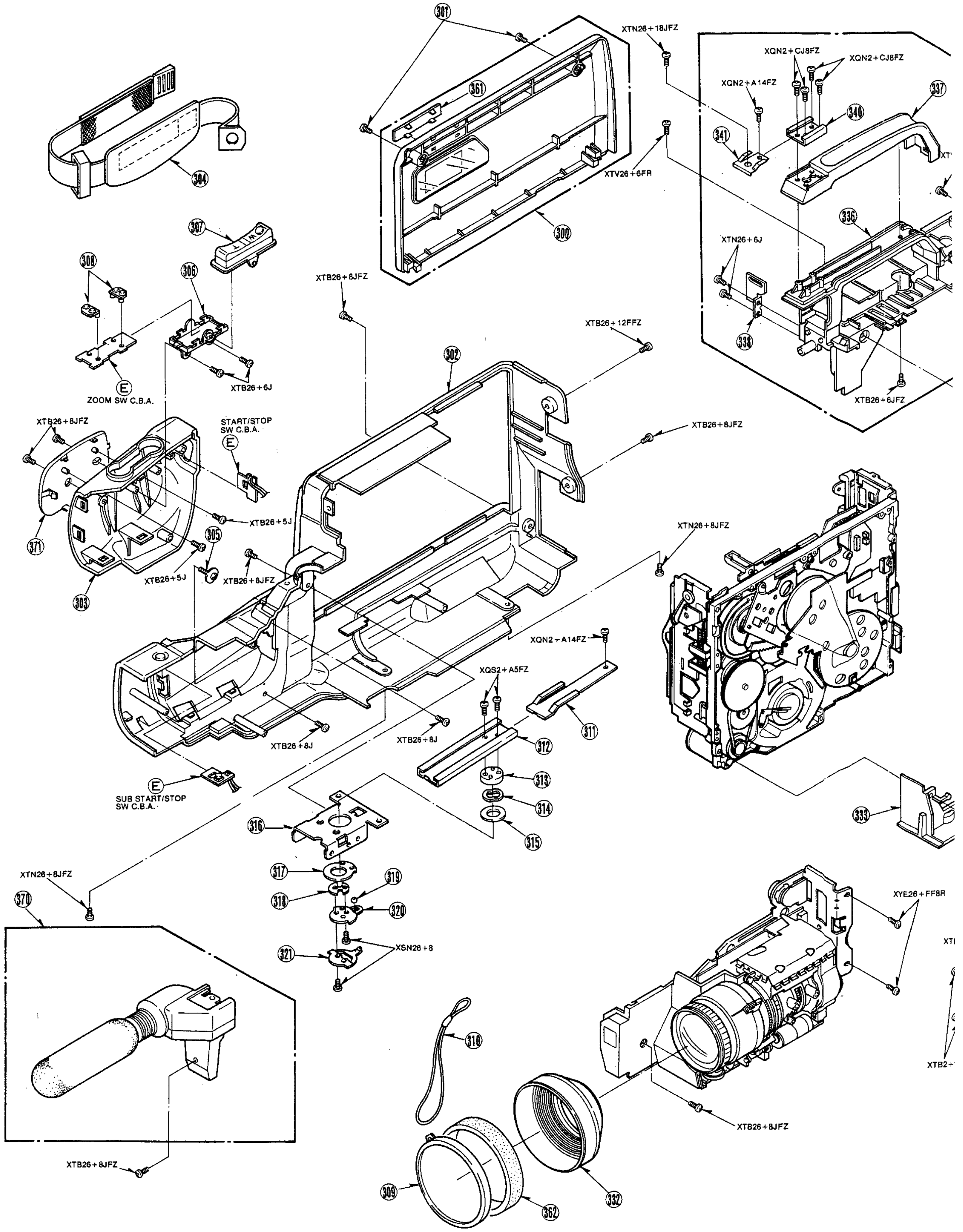
293
294

❹ CHASSIS & FRAME SECTION


XTN26+18JFZ
XQN2+CJ8FZ
XQN2+A14FZ
XTV26+6FR
XTN26+6J
XTB26+8JFZ
XTB26+12FFZ
ZOOM SW C.B.A.
START/STOP SW C.B.A.
XTB26+6J
XTB26+5J
XTN26+8JFZ
XQN2+A14FZ
XQS2+A5FZ
XTB26+8J
SUB START/STOP SW C.B.A.
XSN26+8
XYE26+FF8R
E
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
332
333
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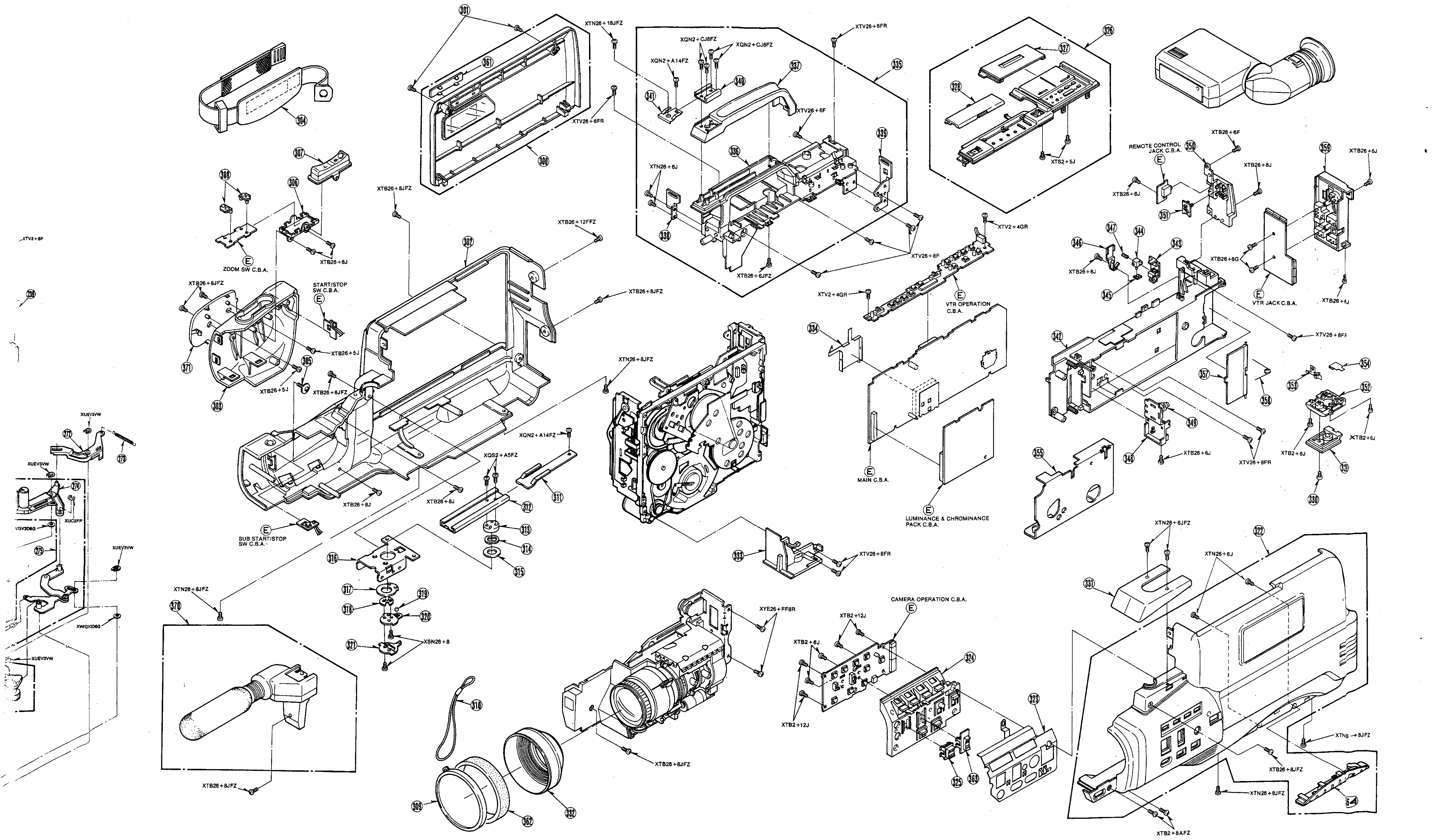
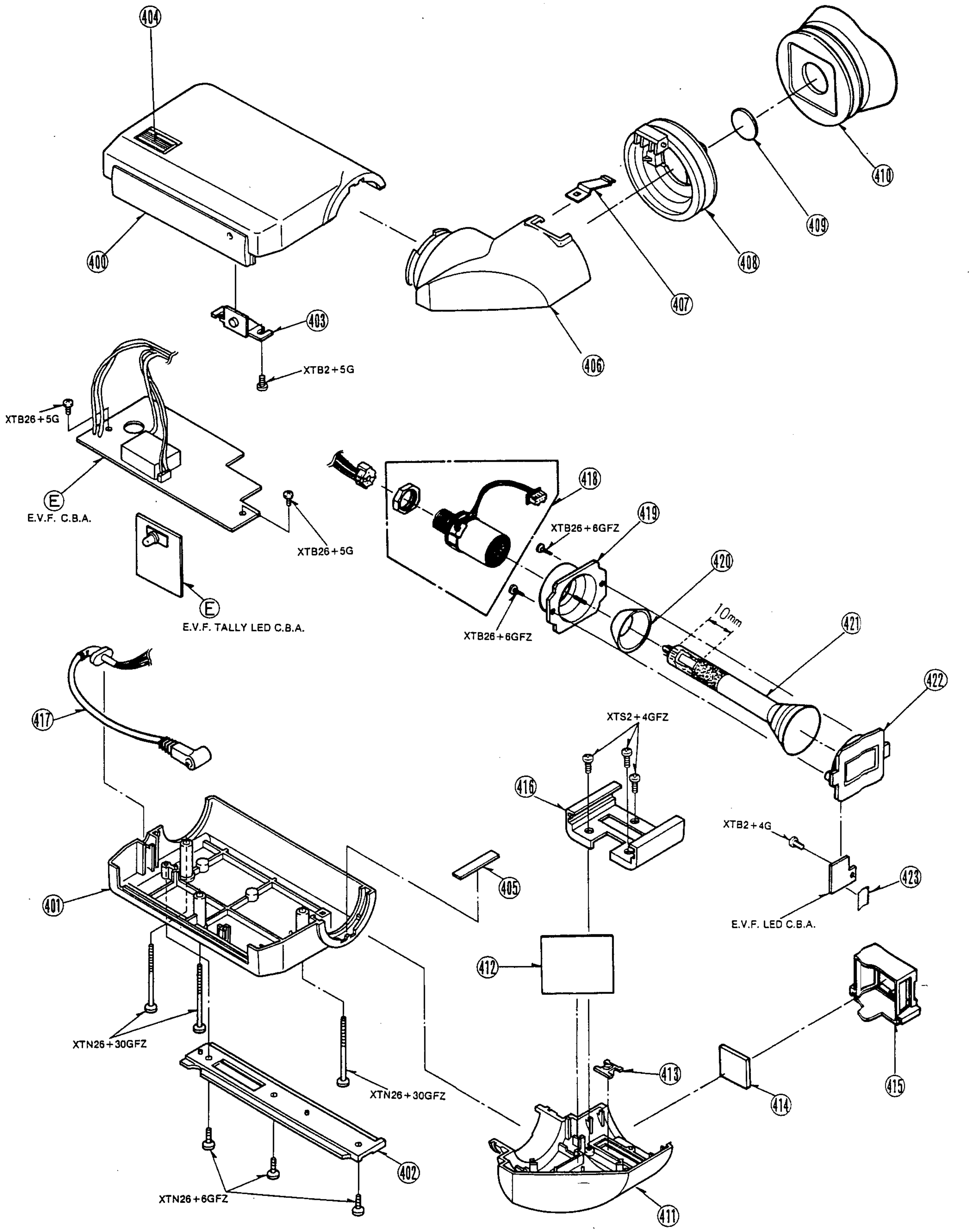
337
338
340
341
361
362
370
371

❹ CHASSIS & FRAME SECTION

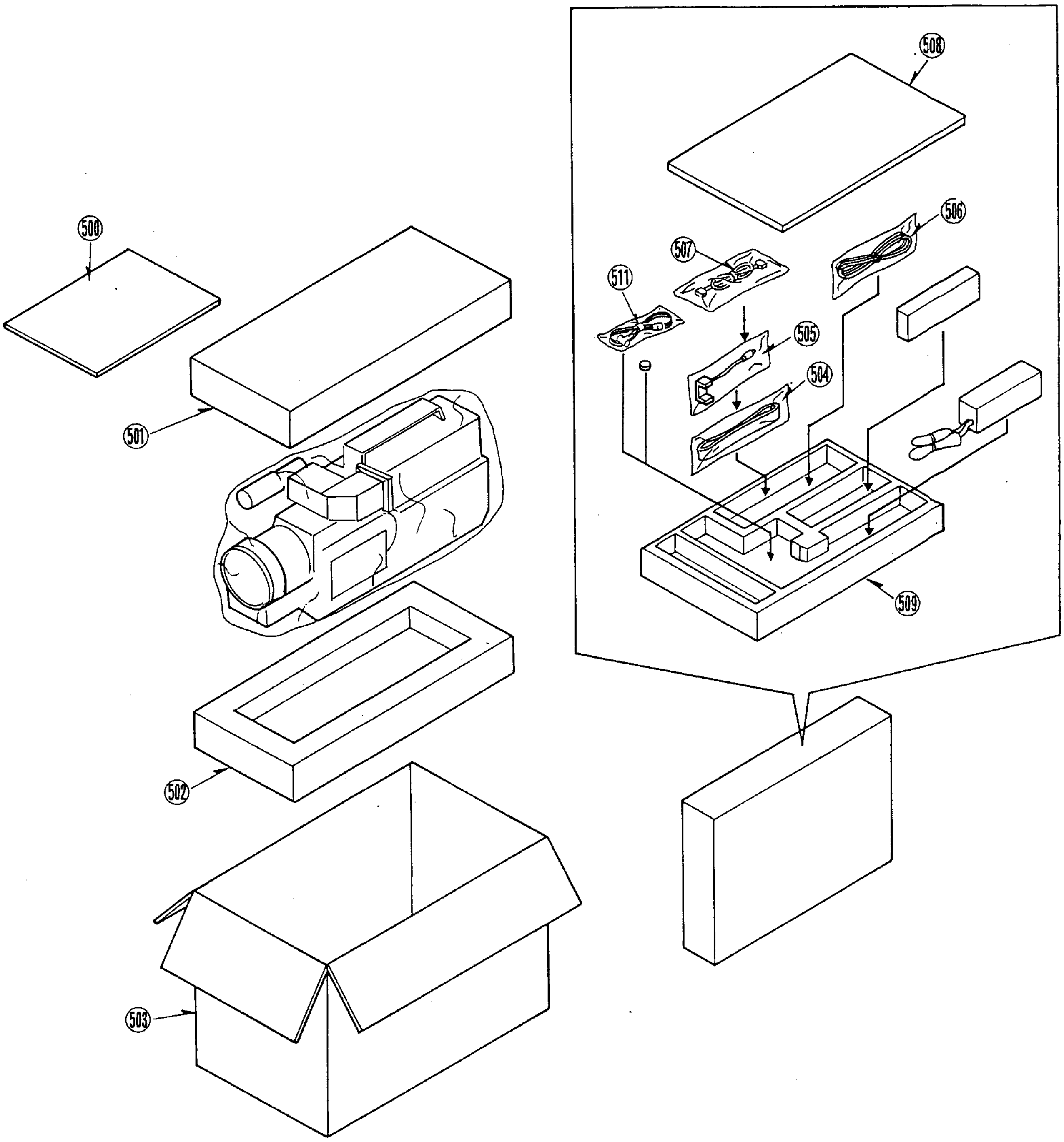

301
361
XTN26+18JFZ
XTV26+8FR
300
304
307
308
306
ZOOM SW C.B.A.
E
XTB26+6J
XTB26+8JFZ
START/STOP SW C.B.A.
E
371
303
XTB26+5J
305
XTB26+5J
XTB26+8JFZ
302
XTB26+12FFZ
XTB26+8JFZ
XTB26+8J
XTB26+8J
SUB START/STOP SW C.B.A.
E
XQN2+A14FZ
XQS2+A5FZ
311
312
313
314
315
316
317
318
319
320
321
XSN26+8
XTN26+8JFZ
370
XTB26+8JFZ
310
309
362
332
XYE26+FF8R
XTB26+8JFZ
XTN26+8JFZ
333
XTV26+8FR
XQN2+CJ8FZ
XQN2+CJ8FZ
XQN2+A14FZ
341
340
337
335
XTV26+8FR
XTV26+8F
336
339
XTN26+6J
338
XTB26+6JFZ
XTV26+8F
326
327
328
XTS2+5J
XTV2+4GR
XTV2+4GR
E
VTR OPERATION C.B.A.
334
E
MAIN C.B.A.
E
LUMINANCE & CHROMINANCE PACK C.B.A.
REMOTE CONTROL JACK C.B.A.
E
350
XTB26+6F
XTB26+8J
XTB26+6J
359
XTB26+6J
351
347
344
346
343
XTB26+6J
345
XTB26+6G
E
VTR JACK C.B.A.
XTB26+6J
342
XTV26+8FR
354
357
356
353
352
349
348
XTB26+6J
XTV26+8FR
XTB2+6J
XTB2+6J
351
330
355
XTN26+6JFZ
XTN26+6J
322
331
CAMERA OPERATION C.B.A.
E
XTB2+12J
XTB2+6J
XTB2+12J
324
323
325
363
XTN26+8JFZ
XTB26+8AFZ
XTN26+8JFZ
XTB2+8AFZ
64
XTV2+8F
239
XUEV3VW
272
273
XUEV3VW
274
XUC2FP
275
XUEV3VW
XWGV306G
XUEV3VW

❺ E.V.F. SECTION



404
400
403
XTB2+5G
406
407
408
409
410
XTB26+5G
E
E.V.F. C.B.A.
XTB26+5G
E
E.V.F. TALLY LED C.B.A.
418
XTB26+6GFZ
419
XTB26+6GFZ
420
10mm
421
422
417
XTS2+4GFZ
416
XTB2+4G
423
E.V.F. LED C.B.A.
401
405
412
415
XTN26+30GFZ
XTN26+30GFZ
413
414
402
XTN26+6GFZ
411

❼ PACKING PARTS & ACCESSORIES SECTION ~~(NV-M1000EN)~~


508
506
507
511
505
504
500
501
509
502
503

MECHANICAL PARTSLIST

2(1)	4822 403 70016	CAMERA ANGLE BOSS
3(1)	4822 532 52225	E.V.F. JACK PIECE
4(1)	4822 432 60404	AWT CASE UNIT
5(1)	4822 502 13061	CCD DRIVE FIXING SCR
8(1)	4822 320 50171	PROCESS FLEX.CORD
9(1)	4822 320 50172	IRIS FLEXIBLE CORD
12(1)	4822 432 60407	CCD DRIVE C.B.A.FRAME
14(1)	4822 380 30261	CRYSTAL FILTER
15(1)	4822 691 20549	CCD UNIT
16(1)	4822 466 61654	CCD CUSHION
17(1)	4822 218 10222	ACTUATER UNIT
18(1)	4822 381 20153	LENS UNIT
19(1)	4822 381 20155	LENS (1) UNIT
20(1)	4822 532 21401	FOCUS RING
21(1)	4822 532 21412	FOCUS RING RUBBER
22(1)	4822 361 21344	IRIS UNIT
23(1)	4822 361 30295	FOCUS MOTOR UNIT
24(1)	4822 361 30296	ZOOM MOTOR UNIT
25(1)	4822 403 70023	FOCUS DRIVE UNIT
26(1)	4822 528 10781	MASTER FLANGE UNIT
27(1)	4822 403 70018	LENS ANGLE A
28(1)	4822 403 53946	IR FIXING SPRING
29(1)	4822 466 61882	IR SPACER
30(1)	4822 380 20364	IR FILTER
100(2)	4822 403 53125	CASSETTE GUIDE (L)
101(2)	4822 522 32901	MAIN ARM GEAR (A)
102(2)	4822 403 53124	CASSETTE GUIDE (R)
103(2)	4822 403 70021	CASSETTE HOLDER UNIT
104(2)	4822 403 70025	DAMPER UNIT
105(2)	4822 403 70024	LOCK LEVER UNIT
107(2)	4822 403 70019	STAND (R) UNIT
109(2)	4822 492 41282	HOLDER SPRING (L)
110(2)	4822 492 32705	HOLDER SPRING (R)
112(2)	4822 278 10083	LEAF SWITCH
113(2)	4822 464 50652	LEAF SW COVER (O)
114(2)	4822 492 41283	LOCK BOARD SPRING
115(2)	4822 402 61181	STAND (L) UNIT
116(2)	4822 492 42138	LOCK LEVER (B) SPRING
117(2)	4822 403 52368	LOCK LEVER (B)
118(2)	4822 528 81154	LOCK ROLLER (O)
119(2)	4822 402 61187	LOCK BOARD UNIT
120(2)	4822 492 41284	LOCK LEVER (A) SPRING
121(2)	4822 403 52367	LOCK LEVER (A)
122(2)	4822 403 70022	CASSETTE UP(O)UNIT
123(2)	4822 528 81037	SUPPLY REEL TABLE
124(2)	4822 528 20613	SUPPLY CLUTCH UNIT
125(2)	4822 528 20614	TAKE-UP CLUTCH UNIT
126(2)	4822 528 10698	TAKE-UP REEL TABLE
128(2)	4822 466 92233	DEW DETECTOR UNIT
129(2)	4822 404 60222	CASSETTE OPENER
135(2)	4822 466 40236	SOFT BRAKE(T)UNIT
136(2)	4822 522 32439	DRIVE GEAR ARM UNIT
137(2)	4822 502 13057	CYLINDER UNIT SCREW
138(2)	4822 691 20457	UPPER CYLINDER UNIT
139(2)	4822 290 60713	RT TERMINAL
140(2)	4822 403 70015	CYLINDER UNIT
141(2)	4822 358 30832	LOADING BELT
142(2)	4822 528 81151	INTERMED.PULLEY GEAR
143(2)	4822 532 51556	CUT WASHER
144(2)	4822 522 32294	DRIVE GEAR (B)
145(2)	4822 466 82337	EARTH HOLDER UNIT
147(2)	4822 522 32293	DRIVE GEAR (A)
148(2)	4822 522 31913	CAM GEAR
149(2)	4822 532 11223	THRUST WASHER
150(2)	4822 466 82336	MAIN ROD (K) UNIT
151(2)	4822 522 31918	LOADING GEAR(C)(2)
152(2)	4822 522 31919	LOADING GEAR(C)SPRING
153(2)	4822 522 31917	LOADING GEAR(C)(1)
154(2)	4822 466 82335	GUARD PLATE
155(2)	4822 403 52388	DRIVE ARMKICK LEVER
156(2)	4822 492 41294	DRIVE ARMK.LEV.SPRING
157(2)	4822 522 31921	SECTOR GEAR UNIT
158(2)	4822 464 50404	SAFETY TAB SW BASE
159(2)	4822 271 30423	SAFETY TAB SW
160(2)	4822 522 31916	DRIVE GEAR (C)
160(2)	4822 278 90565	MODE SELECT SW
163(2)	4822 466 61663	STATOR UNIT
164(2)	4822 528 81036	ROTOR UNIT
165(2)	4822 528 81215	MAIN PULLEY UNIT
166(2)	4822 358 20241	CAPSTAN BELT
167(2)	4822 432 60233	BELT COVER
200(3)	4822 502 12847	P2 ADJUST PLATE SCREW.
201(3)	4822 403 52379	P2 ADJUST PLATE
202(3)	4822 464 50413	SUPPLY POST STOPPER
203(3)	4822 402 61179	V STOPPER BASE
204(3)	4822 528 81155	SUPP.ROLL.POST UNIT
205(3)	4822 462 40808	P2 CAP
206(3)	4822 403 52386	TAPE PROTECTOR
207(3)	4822 464 50416	SUPP.SHAFT HOLD.(1)U
208(3)	4822 403 52392	SUPP.SHAFT HOLD.1.ANGLE
209(3)	4822 404 60204	CONNECTION ROD
210(3)	4822 532 11662	RING GUIDE SLEEVE UNIT
211(3)	4822 403 52391	CONNECTION TIE UNIT
212(3)	4822 492 41292	LOADING SPRING
213(3)	4822 522 31926	LOAD.RING(S)(1)UNIT
214(3)	4822 528 70529	RING GUIDE ROLLER
215(3)	4822 492 41292	LOADING SPRING
216(3)	4822 522 32779	LOAD.RING T.1.UNIT
217(3)	4822 492 63993	PRESSURE SPRING
218(3)	4822 532 11661	RING GUIDE SLEEVE
219(3)	4822 403 53457	LOADING GUIDE S.1.
220(3)	4822 402 61176	LOADING GUIDE S.2.
221(3)	4822 530 70449	SUPPLY UPPER LIMITER
222(3)	4822 325 60299	P1 POST SLEEVE .B.
223(3)	4822 532 11975	P1 COLLAR
224(3)	4822 532 21384	P1 ROLLER
225(3)	4822 404 60203	P1 LIMITER PLATE
226(3)	4822 502 13062	SCREW
227(3)	4822 402 61183	P1 BASE .1.UNIT
228(3)	4822 520 20395	THRUST SPACER
229(3)	4822 502 12017	THRUST SCREW NUT
230(3)	4822 502 13059	ROLLER POST SCREW
231(3)	4822 462 40812	DUST SEAL
232(3)	4822 466 92222	CAPSTAN HOUSING UNIT
233(3)	4822 528 90782	TAKE-UP ROLL.POST UN
234(3)	4822 404 60202	TAKE-UP SHAFT HOL.ANGLE
235(3)	4822 402 61184	TAKE-UP SHAFT HOL.ANGLE
236(3)	4822 402 61178	TAKE-UP LOADING BASE
237(3)	4822 492 42257	SHAFT HOLDER PR. SPRING
238(3)	4822 466 82334	SHAFT HOLD.PLATE ANGLE
239(3)	4822 130 32878	LED
240(3)	4822 502 13058	TAKE-UP SHAFT ADJ.SCREW
242(3)	4822 361 21106	LOADING MOTOR UNIT
245(3)	4822 492 32843	TENSION SPRING
246(3)	4822 464 50421	TENSION ARM UNIT
247(3)	4822 321 30349	TENSION BAND UNIT
248(3)	4822 404 60418	BAND RELEASE ARM
249(3)	4822 464 50419	TENSION KICK LEVER
250(3)	4822 404 60417	EJECT LEVER .A.
251(3)	4822 404 60422	SUPPORT UNIT
252(3)	4822 492 32702	BRAKE SPRING
253(3)	4822 466 40185	BRAKE .R. UNIT
254(3)	4822 466 40184	BRAKE .L. UNIT
255(3)	4822 466 81684	BRAKE PLATE .1. UNIT
256(3)	4822 404 60421	EJECT LEVER .B.
257(3)	4822 691 20584	A/C HEAD UNIT
258(3)	4822 502 12846	A/C HEAD ADJ.SCREW
259(3)	4822 492 41297	A/C HEAD ADJ.SPRING
260(3)	4822 502 13085	A/C HEAD TILT ADJ.SCREW

261(3)	4822 403 53464	A/C HEAD ARM UNIT
262(3)	4822 403 70017	A/C HEAD BINDER
263(3)	4822 505 10931	A/C HEAD ARM UNIT
264(3)	4822 492 41296	A/C HEAD SPRING
265(3)	4822 522 31923	LOADING GEAR .A.
266(3)	4822 522 32442	LOADING GEAR .B.
267(3)	4822 505 10929	ADJUST NUT
268(3)	4822 505 10776	M2 NYLON NUT
269(3)	4822 535 70855	P4 POST SLEEVE
270(3)	4822 535 71217	P5 POST SLEEVE
271(3)	4822 492 41298	P4,P5 SPRING
272(3)	4822 404 60419	PINCH LEVER
273(3)	4822 492 70598	PINCH LEVER SPRING
274(3)	4822 528 70522	PINCH ROLL.ARM.1.UNIT
275(3)	4822 528 70534	PINCH ARM UNIT
276(3)	4822 492 41302	PINCH ARM SPRING
277(3)	4822 403 10238	SOFT BRAKE LEV.S.UNIT
278(3)	4822 492 41289	SOFT BRAKE SPRING.(S).
279(3)	4822 492 32845	REW ARM SPRING
280(3)	4822 404 60423	FF/REW ARM UNIT
282(3)	4822 218 20556	FE HEAD
283(3)	4822 466 92225	FE HEAD BASE
284(3)	4822 492 32703	SUPPORTER SPRING
285(3)	4822 403 53835	SLIDE BASE .O. UNIT
286(3)	4822 492 70325	SLIDE SPRING
287(3)	4822 403 53834	IMPEDANCE LEVER
288(3)	4822 505 11049	PUSH UNIT
289(3)	4822 492 70597	IMPEDANCE DRIVE SPR.
290(3)	4822 403 70033	IMPEDANCE ARM.1.UNIT
291(3)	4822 528 81384	IMPEDANCE ROLLER
292(3)	4822 530 70449	SUPP.UPPER LIMITER
294(3)	4822 403 70032	SUPP.SHAFT HOLD.UNIT
300(4)	4822 432 60397	CASSETTE COVER UNIT
301(4)	4822 502 13063	CASSETTE COVER SCREW
301(4)	4822 432 60438	SIDE CASE .L. 1.UNIT
302(4)	4822 432 60441	GRIP CASE 1 UNIT
304(4)	4822 498 30167	GRIP BELT UNIT
305(4)	4822 502 13086	GRIP BELT SCREW
306(4)	4822 466 92862	ZOOM BUTTON PIECE
307(4)	4822 410 60681	ZOOM BUTTON
308(4)	4822 276 12923	SWITCH RUBBER PIECE
309(4)	4822 462 41691	HOOD CAP
310(4)	4822 401 11185	HOOD STRAP
311(4)	4822 432 60123	E.V.F.SHOE SPRING
312(4)	4822 403 53128	E.V.F.SHOE
313(4)	4822 532 40174	E.V.F.ROTATION STAND
314(4)	4822 532 11567	WAVING WASHER
315(4)	4822 532 11566	E.V.F.ROTATION SPACER
316(4)	4822 403 70029	E.V.F.ANGLE
317(4)	4822 532 40187	E.V.F.ROTAT.PIECE .A
318(4)	4822 532 40188	E.V.F.ROTAT.PIECE .B
319(4)	4822 520 40239	E.V.F.CLICK BALL
320(4)	4822 466 82664	E.V.F.CLICK SPR. .A.
321(4)	4822 466 82677	E.V.F.CLICK SPR. .B
322(4)	4822 432 60439	SIDE CASE .R. 1 UNIT
324(4)	4822 459 80685	CAMERA OPERAT.PANEL
325(4)	4822 410 60682	FOCUS KNOB
326(4)	4822 276 80388	OPERATION PANEL UNIT
327(4)	4822 432 60417	CURSOR
328(4)	4822 432 60416	RESET/MEMORY LID
329(4)	4822 432 60415	BATTERY LID
330(4)	4822 502 13511	BATTERY LID SCREW
331(4)	4822 432 60419	E.V.F. BASE CASE
332(4)	4822 532 61173	LENS HOOD
333(4)	4822 404 60424	TRIPOD FIX.BRACKET
336(4)	4822 432 60424	TOP FRAME
337(4)	4822 432 60418	HANDLE TOP COVER
338(4)	4822 403 70028	SHOULDER BELT ANGLE
339(4)	4822 403 70031	SHOULDER BELT ANGLE
340(4)	4822 403 53132	SHOE
341(4)	4822 492 70601	SHOE SPRING
342(4)	4822 432 60427	BATTERY CASE 1 UNIT
343(4)	4822 410 25577	BATTERY EJECT BUTTON
344(4)	4822 403 53117	BATTERY LOCK PIECE
345(4)	4822 403 53118	BATTERY STOPPER PIECE
346(4)	4822 403 53123	BATT.STOPP.FIX.ANGLE
347(4)	4822 492 42139	BATT.STOPPER SPRING
348(4)	4822 404 60415	BATTERY CATCHER
349(4)	4822 492 51973	BATTERY EJECT SPRING
350(4)	4822 466 82665	JACK PLATE 1 UNIT
351(4)	4822 410 60679	JACK KNOB
352(4)	4822 432 60425	BATTERY HOLDER UNIT
353(4)	4822 290 81345	ELECTRODE (-)
354(4)	4822 290 80843	ELECTRODE (+)
355(4)	4822 432 60414	BATTERY CASE COVER
357(4)	4822 432 60111	BATTERY DOOR
358(4)	4822 492 42142	BATTERY DOOR SPRING
359(4)	4822 432 60408	VTR JACK PLATE /PH
359(4)	4822 432 60409	VTR JACK PLATE /NTRL
361(4)	4822 432 60413	CASSETTE COVER PIECE
362(4)	4822 532 52226	LENS HOOD RUBBER
363(4)	4822 413 31606	WHITE BALANCE KNOB
364(4)	4822 466 92863	SHOULDER PAD
370(4)	4822 242 30205	MIC UNIT
400(5)	4822 432 60426	E.V.F.TOP COVER UNIT
401(5)	4822 432 60421	E.V.F.BOTTOM COVER
402(5)	4822 432 60412	E.V.F.HOOD
403(5)	4822 403 70026	LED PANEL LIGHT
404(5)	4822 432 60411	VOLUME CAP
405(5)	4822 492 70599	E.V.F.ROTARION SPRING
406(5)	4822 432 60423	CRT TOP CASE
407(5)	4822 492 63931	EYE CAP HOLDER SPRING
408(5)	4822 532 61176	EYE CAP HOLDER
409(5)	4822 381 20134	EYE CAP LENS
410(5)	4822 462 71654	EYE CAP
411(5)	4822 432 60422	CRT BOTTOM COVER
412(5)	4822 380 30278	MIRROR
413(5)	4822 413 31607	EYESIGHT CORRECT.KNOB
414(5)	4822 381 20133	EYESIGHT CORRECT.LENS
415(5)	4822 256 91628	LENS HOLDER
416(5)	4822 403 70027	LENS HOLDER GUIDE
417(5)	4822 321 60712	E.V.F CABLE UNIT
418(5)	4822 150 10247	DEFLECTION YOKE
419(5)	4822 532 61175	CRT HOLDER
420(5)	4822 532 51988	CRT PROTECTOR RUBBER
421(5)	4822 131 81025	CRT
422(5)	4822 462 71653	CRT MASKING
423(5)	4822 466 92861	LED SHEET
500(7)	4822 736 51963	DIR.F.USE /PH.
500(7)	4822 736 52071	DIR.F.USE /NTRL
504(7)	4822 498 20112	SHOULDER STRAP
505(7)	4822 321 21111	RECHARGEABLE BATTERY
506(7)	4822 321 60713	AUDIO/VIDEO CORD
507(7)	4822 321 60714	3P DC JACK CORD
	4822 321 22748	FLEX.EXTENS.CABLE
	4822 395 30279	EXTENSION CABLE
	4822 395 50395	HOLDER SPACER (2PCS)
	4822 432 60215	CAMERA HOLDER ARM
	4822 395 90566	CAMERA HOLDER
	4822 397 30103	VHS-ALLGNM.TAPE(PAL)
	4822 395 40055	RETAIN.RING REM.(3MM
	4822 395 80184	POST ADJ.PLATE
	4822 395 90238	REEL TABLE HEIGHT GA
	4822 395 90237	H-POSITION ADJ.FIXTU
	4822 395 50168	POST ADJ.SCREWDRIVER
	4822 395 80208	FAN TYPE TENS.GAUGE
	4822 395 50184	HEX WRENCH SET
	4822 395 90585	CHECK LIGHT
	4822 395 90256	HEAD CLEANING STICK
	4822 395 90253	SERV.ALGINM.TOOL KIT
	4822 395 50167	FINE ADJ.SCREWDRIVER
	4822 395 90233	ADAPTOR FOR VFK0133
	4822 395 90232	DIAL TORQUE GAUGE

ELECTRICAL PARTSLIST

AWT C.B.A.

CAPACITORS

C601-03	4822 122 33731	25V 0.1U

INTEGRATED CIRCUITS

IC601	4822 209 61984	M51096AU
IC602	4822 209 71423	AN1358S

CONNECTORS

P601	4822 265 30829	MALE 5P

RESISTORS

R601	4822 116 82266	1/10W 12K
R602	4822 116 82279	1/10W 8.2K
R603	4822 116 82278	1/10W 120K
R604	4822 116 81068	0,03W 2.2K
R605	4822 116 81046	0,03W 1K
R606,07	4822 116 81047	0,03W 10K
R608	4822 116 81046	0,03W 1K
R609	4822 116 81068	0,03W 2.2K
R610	4822 116 81047	0,03W 10K

CCD DRIVE C.B.A.

CONNECTORS

B201	4822 265 40896	MALE

CAPACITORS

C201	4822 124 10782	10V 10U
C202-03	4822 122 33752	50V 15P
C204	4822 122 33775	50V 39P
C206	4822 124 23343	
C207	4822 124 10782	10V 10U
C208	4822 124 23237	6.3V 22U
C209	4822 124 10787	16V 10U
C210	4822 124 23243	50V 1U
C211	4822 122 32893	25V 0.1U
C212	4822 124 23235	25V 10U
C213	4822 122 33672	25V 0.047U
C214	4822 124 41019	50V 1U
C215,16	4822 122 33764	50V 27P
C218,19	4822 122 33764	50V 27P
C220	4822 124 10787	16V 10U
C221,22	4822 122 33764	50V 27P
C223	4822 122 33787	50V 6800P
C225	4822 122 33731	25V 0.1U
C226	4822 124 23341	25V 10U
C229	4822 124 41003	6.3V 47U
C230-33	4822 122 33731	25V 0.1U
C236	4822 122 33752	50V 15P
C237	4822 122 33731	25V 0.1U
C238-40	4822 122 33768	50V 33P
C241	4822 122 33744	50V 100P
C242,43	4822 122 33731	25V 0.1U
C244	4822 122 33672	25V 0.047U
C245	4822 122 33731	25V 0.1U
C246	4822 122 33752	50V 15P
C247	4822 124 23242	16V 10U
C248-50	4822 122 33731	25V 0.1U
C251	4822 122 33768	50V 33P
C252,53	4822 122 33731	25V 0.1U
C255	4822 124 23242	16V 10U
C260,63	4822 122 33731	25V 0.1U
C280	4822 124 10782	10V 10U
C281	4822 124 10787	16V 10U
C282,83	4822 122 33757	50V 18P
C284	4822 122 33672	25V 0.047U
C285	4822 122 33757	50V 18P

DIODES

D202	4822 130 80732	MA728
D204-05	4822 130 80727	MA110
D207	4822 130 80727	MA110
D209	4822 130 80289	MA141WK
D210-13	4822 130 80727	MA110

FILTERS

FL201	4822 242 72131	FILTER
FP201	4822 267 60283	(FEMALE)

INTEGRATED CIRCUITS

IC201	4822 209 62181	MN73912XWB
IC202	4822 209 62178	MN3107CS
IC203	4822 209 61961	AN2012S

COILS

L201	4822 157 52301
L203-07	4822 157 52301
L210-14	4822 157 53409

TRANSISTORS

Q201-03	4822 130 61084	2SD1819
Q204	4822 130 61079	2SC3930
Q205	4822 130 60864	2SA1610
Q206	4822 130 60872	2SC4176
Q207	4822 130 60864	2SA1610
Q208	4822 130 60872	2SC4176
Q209	4822 130 60864	2SA1610
Q210	4822 130 60872	2SC4176

RESISTORS

R201	4822 116 81078	0,03W 330
R202	4822 116 81055	0,03W 150
R203	4822 116 81049	0,03W 1M
R204	4822 116 81046	0,03W 1K
R205	4822 116 81081	0,03W 33K
R206	4822 116 81063	0,03W 18K
R207	4822 116 81047	0,03W 10K
R208	4822 116 81089	0,03W 470
R209	4822 116 81092	0,03W 47K
R210,11	4822 116 81091	0,03W 4.7K
R212	4822 116 81077	0,03W 33
R216	4822 116 81047	0,03W 10K
R217	4822 116 81045	0,03W 100
R218	4822 116 81091	0,03W 4.7K
R221	4822 116 81045	0,03W 100
R222	4822 116 81053	0,03W 12K
R223,24	4822 116 81067	0,03W 220
R225,26	4822 116 81046	0,03W 1K
R227	4822 116 81074	0,03W 2.7K
R228	4822 116 81067	0,03W 220
R229	4822 116 81046	0,03W 1K
R230	4822 116 81049	0,03W 1M
R231	4822 116 81048	0,03W 100K
R232,33	4822 116 81045	0,03W 100
R234	4822 116 81074	0,03W 2.7K
R235	4822 116 81048	0,03W 100K
R236	4822 116 81072	0,03W 27
R240	4822 116 81079	0,03W 3.3K
R270	4822 111 90357	1/8W 33

POTMETERS

VR201	4822 100 30083	POTM. 200K
VR202	4822 100 30085	POTM. 50K

XTALS

X201	4822 242 72142	XTAL

PROCESS C.B.A.

CONNECTORS

B301	4822 267 50925
B305	4822 267 50925

CAPACITORS

C301	4822 122 33753	50V 150P
C303,04	4822 124 10759	16V 1U
C305	4822 122 33746	50V 1000P
C306	4822 122 33748	50V 0.01U
C307	4822 122 33725	16V 1U
C308	4822 122 33748	50V 0.01U
C309	4822 122 33785	50V 68P
C310	4822 122 33761	50V 22P
C311	4822 122 33725	16V 1U
C312	4822 122 33746	50V 1000P
C313	4822 124 10759	16V 1U
C314	4822 124 10787	16V 10U
C315	4822 122 33748	50V 0.01U
C316,17	4822 122 33725	16V 1U
C318,17	4822 122 33748	50V 0.01U
C320,21	4822 122 33672	25V 0.047U
C322	4822 122 33731	25V 0.1U
C323	4822 124 11028	6.3V 22U
C324	4822 122 33748	50V 0.01U
C325	4822 124 23244	50V 2.2U
C326	4822 124 41007	10UF 10V
C327	4822 122 33748	50V 0.01U
C328,29	4822 122 33731	25V 0.1U
C330	4822 124 10783	10V 22U
C331	4822 122 33672	25V 0.047U
C332	4822 124 23243	50V 1U
C333	4822 124 23245	50V 3.3U
C334	4822 122 33744	50V 100P
C335	4822 122 33672	25V 0.047U
C336,37	4822 122 33731	25V 0.1U
C338,39	4822 122 33672	25V 0.047U
C340,41	4822 122 33731	25V 0.1U
C342	4822 122 33672	25V 0.047U
C343	4822 122 33731	25V 0.1U
C344	4822 122 33746	50V 1000P
C345	4822 124 23241	16V 4.7U
C346	4822 124 11087	35V 4.7U
C348	4822 124 41007	10UF 10V
C349	4822 126 10619	50V 220P
C350	4822 124 41007	10UF 10V
C351	4822 122 33731	25V 0.1U
C353	4822 122 33768	50V 33P
C354	4822 122 33671	16V 0.22U
C355,56	4822 122 33748	50V 0.01U
C357	4822 124 22756	50V 1U
C358	4822 124 10783	10V 22U
C360	4822 122 33731	25V 0.1U
C361	4822 124 41029	16V 33U
C362	4822 122 33764	50V 27P
C363,64	4822 122 33731	25V 0.1U
C365	4822 124 11029	6.3V 33U
C366	4822 122 33748	50V 0.01U
C368	4822 126 10621	50V 270P
C369	4822 124 10782	10V 10U
C371	4822 124 10759	16V 1U
C372	4822 124 23238	6.3V 47U
C373	4822 124 41007	10UF 10V
C374-76	4822 122 33731	25V 0.1U
C377	4822 122 33748	50V 0.01U
C378	4822 122 33761	50V 22P
C380	4822 122 33768	50V 33P
C382	4822 122 33761	50V 22P
C384	4822 124 23236	25V 4.7U
C385	4822 124 41007	10UF 10V
C386	4822 124 23242	16V 10U
C387-89	4822 122 33782	50V 56P
C393	4822 122 33788	50V 82P
C395,36	4822 122 33725	16V 1U
C398,00	4822 122 33748	50V 0.01U
C401,02	4822 122 33753	50V 150P
C416	4822 124 23232	4V 220U
C501	4822 124 23239	10V 10U
C502,03	4822 122 33731	25V 0.1U
C504	4822 124 23239	10V 10U
C505,06	4822 122 33672	25V 0.047U
C508	4822 122 33731	25V 0.1U

DIODES

D301	4822 130 80729	MA141A
D305	4822 130 80729	MA141A
D306	4822 130 80289	MA141WK
D307	4822 130 80732	MA728
D308	4822 130 80731	MA3047M
D309,10	4822 130 80727	MA110
D501	4822 130 80376	MA141WA
D502	4822 130 80732	MA728
D503	4822 130 80729	MA141A

FILTERS

FL301	4822 157 62049
FL302	4822 157 62053
FL303	4822 242 72122
FL304	4822 157 62048
FL305	4822 157 62054
FL307	4822 157 62051
FL308	4822 157 62047

CONNECTORS

FP306	4822 267 50926	
FP310	4822 267 50999	(FEMALE)

INTEGRATED CIRCUITS

IC302	4822 209 61978	MN3819S
IC303	4822 209 61979	MN3820S
IC304	4822 209 61962	AN2154FAP
IC308,9	4822 209 61974	LM2904M
IC310	4822 209 61963	AN2254FAP
IC311	4822 209 62179	MN73512XWA
IC312	4822 209 72826	MC8181A
IC501	4822 209 61986	RZ4052BM
IC502	4822 209 72825	LM2902M
IC503	4822 209 61974	LM2904M
IC504,5	4822 209 72825	LM2902M
IC506	4822 209 73819	RC4558M

COILS

L301	4822 157 10212	15UH
L302	4822 157 62055	15UH
L303	4822 157 52485	100UH
L304-06	4822 157 10212	15UH

L307	4822 157 52486	33UH
L308,09	4822 157 10212	15UH
L310	4822 157 53409	
L311	4822 157 10212	15UH
L312	4822 157 52485	100UH
L313	4822 157 52486	33UH
L316	4822 157 52486	33UH

CONNECTORS

P302	4822 265 30831	MALE
P309	4822 265 30728	MALE

TRANSISTORS

Q301	4822 130 61084	2SD1819
Q302	4822 130 61081	2SC3931
Q303	4822 130 61075	2SB1218
Q304	4822 130 60667	2SA1532
Q305	4822 130 61072	XN4601
Q306	4822 130 62202	XN4401
Q308	4822 130 61072	XN4601
Q310	4822 130 61075	2SB1218
Q312	4822 130 61084	2SD1819
Q313	4822 130 61081	2SC3931
Q314	4822 130 61084	2SD1819
Q315	4822 130 62202	XN4401
Q317	4822 130 61084	2SD1819
Q320	4822 130 62202	XN4401
Q322	4822 130 62232	XN4608
Q324	4822 130 60667	2SA1532
Q328	4822 130 62203	XN4501
Q505	4822 130 62203	XN4501
Q508-10	4822 130 61072	XN4601

RESISTORS

R301	4822 116 81046	3W 1K
R302	4822 116 81073	3W 270
R303	4822 116 81084	3W 390
R304	4822 116 81046	3W 1K
R305	4822 116 81089	3W 470
R306	4822 116 81068	3W 2.2K
R307	4822 116 81046	3W 1K
R308	4822 116 81062	3W 1.8K
R309	4822 116 81095	3W 560
R310	4822 116 81045	3W 100
R311,12	4822 116 81079	3W 3.3K
R313	4822 116 81091	3W 4.7K
R314	4822 116 81046	3W 1K
R315	4822 116 81062	3W 1.8K
R317	4822 116 81095	3W 560
R318	4822 116 81085	3W 3.9K
R319	4822 116 81046	3W 1K
R321	4822 116 81068	3W 2.2K
R322	4822 116 81046	3W 1K
R323	4822 116 81091	3W 4.7K
R324	4822 116 81068	3W 2.2K
R325,26	4822 116 81091	3W 4.7K
R327	4822 116 81046	3W 1K
R328	4822 116 81091	3W 4.7K
R329	4822 116 81063	3W 18K
R330	4822 116 81079	3W 3.3K
R331	4822 116 81096	3W 5.6K
R332	4822 116 81091	3W 4.7K
R333	4822 116 81142	3W 8.2K
R334	4822 116 81107	3W 820
R336	4822 116 81048	3W 100K
R337	4822 116 81058	3W 150K
R338	4822 116 81046	3W 1K
R339	4822 116 81086	3W 39K
R340	4822 116 81063	3W 18K
R341	4822 116 81057	3W 15K
R342	4822 116 81092	3W 47K
R343	4822 116 81075	3W 27K
R344	4822 116 81063	3W 18K
R345	4822 116 81081	3W 33K
R348	4822 116 81092	3W 47K
R349	4822 116 81047	3W 10K
R350	4822 116 81096	3W 5.6K
R351	4822 116 81094	3W 56
R352	4822 116 81048	3W 100K
R353	4822 116 81069	3W 22K
R354	4822 116 81075	3W 27K
R355	4822 116 81046	3W 1K
R357	4822 116 81075	3W 27K
R358	4822 116 81046	3W 1K
R359	4822 116 81048	3W 100K
R360	4822 116 81091	3W 4.7K
R361,62	4822 116 81081	3W 33K
R363	4822 116 81068	3W 2.2K
R364	4822 116 81091	3W 4.7K
R365	4822 116 81047	3W 10K
R366	4822 116 81046	3W 1K
R367	4822 116 81095	3W 560
R368	4822 116 81078	3W 330
R369-71	4822 116 81046	3W 1K
R374,75	4822 116 81091	3W 4.7K
R376	4822 116 81092	3W 47K
R377	4822 116 81046	3W 1K
R378	4822 116 81085	3W 3.9K
R379	4822 116 81047	3W 10K
R380	4822 116 81068	3W 2.2K
R381	4822 116 81056	3W 1.5K
R382	4822 116 81075	3W 27K
R383	4822 116 81102	3W 68K
R385	4822 116 81108	3W 82K
R386	4822 116 81063	3W 18K
R387	4822 116 81047	3W 10K
R388	4822 116 81062	3W 1.8K
R389	4822 116 81049	3W 1M
R390	4822 116 81053	3W 12K
R394	4822 116 81058	3W 150K
R396	4822 116 81058	3W 150K
R397	4822 116 81045	3W 100
R398	4822 116 81048	3W 100K
R399	4822 116 81097	3W 56K
R400	4822 116 81048	3W 100K
R401	4822 116 81047	3W 10K
R402,03	4822 116 81046	3W 1K
R404	4822 116 81091	3W 4.7K
R405	4822 116 81142	3W 8.2K
R406	4822 116 81099	3W 680
R408	4822 116 81099	3W 680
R409	4822 116 81047	3W 10K
R410	4822 116 81085	3W 3.9K
R411	4822 116 81046	3W 1K
R412	4822 116 81062	3W 1.8K
R413	4822 116 81068	3W 2.2K
R414	4822 116 81084	3W 390
R415	4822 116 81047	3W 10K
R416	4822 116 81096	3W 5.6K
R417	4822 116 81046	3W 1K
R418	4822 116 81047	3W 10K
R419	4822 116 81056	3W 1.5K
R426	4822 116 81046	3W 1K
R427	4822 116 81091	3W 4.7K
R428	4822 116 81112	3W 0.00
R429	4822 116 81068	3W 2.2K
R431	4822 116 81069	3W 22K
R432	4822 116 81097	3W 56K
R433	4822 116 81081	3W 33K
R434	4822 116 81046	3W 1K

R435	4822 116 81047	3W 10K
R436	4822 116 81085	3W 3.9K
R437,38	4822 116 81046	3W 1K
R439	4822 116 81091	3W 4.7K
R440	4822 116 81047	3W 10K
R442	4822 116 81092	3W 47K
R443,44	4822 116 81062	3W 1.8K
R445,47	4822 116 81068	3W 2.2K
R448	4822 116 81079	3W 3.3K
R449	4822 116 81085	3W 3.9K
R450	4822 116 81053	3W 12K
R451	4822 116 81108	3W 82K
R452	4822 116 81053	3W 12K
R453	4822 116 81098	3W 560K
R456,57	4822 116 81057	3W 15K
R458	4822 116 81062	3W 1.8K
R459	4822 051 30139	3W 3.9K
R460	4822 116 81067	3W 220
R461	4822 116 81089	3W 470
R462	4822 116 81046	3W 1K
R463	4822 051 30139	3W 3.9K
R465	4822 116 81099	3W 680
R468	4822 116 81058	3W 150K
R501,02	4822 116 81101	3W 6.8K
R503,04	4822 116 81048	3W 100K
R505	4822 116 81082	3W 330K
R506,07	4822 116 81047	3W 10K
R508	4822 116 81048	3W 100K
R509	4822 116 81071	3W 220K
R510	4822 116 81058	3W 150K
R511	4822 116 81071	3W 220K
R512,13	4822 116 81047	3W 10K
R514,15	4822 116 81048	3W 100K
R516	4822 116 81082	3W 330K
R517	4822 116 81046	3W 1K
R518	4822 116 82494	3W 10M
R519	4822 116 81097	3W 56K
R520	4822 116 81076	3W 270K
R521	4822 116 81082	3W 330K
R522	4822 051 30335	3W 3.3M
R523	4822 116 81097	3W 56K
R524	4822 116 81098	3W 560K
R525	4822 116 81046	3W 1K
R526	4822 116 82494	3W 10M
R527	4822 116 81097	3W 56K
R528	4822 116 81076	3W 270K
R529	4822 116 81082	3W 330K
R530	4822 051 30335	3W 3.3M
R531	4822 116 81097	3W 56K
R532	4822 116 81098	3W 560K
R533	4822 116 81048	3W 100K
R534-36	4822 116 81047	3W 10K
R537	4822 116 81071	3W 220K
R538	4822 116 81058	3W 150K
R539	4822 116 81108	3W 82K
R540,41	4822 116 81047	3W 10K
R542	4822 116 81071	3W 220K
R543	4822 116 81047	3W 10K
R544-53	4822 116 81081	3W 33K
R554,55	4822 116 81047	3W 10K
R562	4822 116 81046	3W 1K
R569,71	4822 116 81047	3W 10K
R572	4822 116 81046	3W 1K
R574,75	4822 116 81048	3W 100K
R576	4822 116 81068	3W 2.2K
R579	4822 116 81046	3W 1K
R580	4822 116 81048	3W 100K
R581	4822 116 81068	3W 2.2K
R582	4822 116 81048	3W 100K
R583	4822 116 81046	3W 1K
R584	4822 116 81112	3W 0.00
R585	4822 116 81047	3W 10K
R586	4822 116 81046	3W 1K
R587,88	4822 116 81053	3W 12K
R589	4822 116 81046	3W 1K
R590	4822 116 81063	3W 18K
R591	4822 116 81054	3W 120K
R592,93	4822 116 81069	3W 22K
R594	4822 116 81071	3W 220K

POTMETERS

VR301	4822 100 30081	POTM 10K
VR303	4822 100 30082	POTM 20K
VR304	4822 100 30085	POTM 50K
VR305-07	4822 100 30082	POTM 20K
VR309,10	4822 100 30082	POTM 20K
VR311,12	4822 100 30081	POTM 10K
VR313-15	4822 100 30079	POTM 1K
VR317-20	4822 100 30084	POTM 1K
VR322	4822 100 30085	POTM 50K
VR324	4822 100 30081	POTM 10K
VR327	4822 100 30081	POTM 10K
VR328	4822 100 30082	POTM 20K
VR329	4822 100 30081	POTM 10K
VR523	4822 100 30085	POTM 50K
VR525,26	4822 100 30082	POTM 20K
VR527	4822 100 30085	POTM 50K
VR528,29	4822 100 30081	POTM 10K
VR530,31	4822 100 30085	POTM 50K
VR532	4822 100 30084	POTM 5K
VR533	4822 100 30092	POTM100K

AUTO FOCUS C.B.A.

CONNECTORS

B701	4822 265 40896	MALE
FP701	4822 267 50984	MALE

CAPACITORS

C701	4822 124 22745	6.3V 470U
C702	4822 122 33757	50V 18P
C703	4822 125 60143	
C706	4822 122 33744	50V 100P
C710,11	5322 122 31862	25V 0.047U
C712	4822 124 40997	6.3V 100U
C713	4822 122 33731	25V 0.1U
C714	4822 124 40997	6.3V 100U
C715	4822 124 10782	10V 10U
C716-19	4822 124 41007	10UF 10V
C720	4822 124 22744	6.3V 22U
C721	4822 122 33672	25V 0.047U
C722-24	4822 122 33735	25V 0.027U
C725	4822 122 33738	25V 0.063U
C726	4822 122 33731	25V 0.1U
C727-29	4822 122 33671	16V 0.22U
C730	4822 122 33768	50V 33P
C731	4822 122 33672	25V 0.047U
C732-35	4822 122 33748	50V 0.01U
C736	4822 126 10621	50V 270P
C737	4822 125 50413	
C738-39	4822 122 33671	16V 0.22U
C740	4822 124 41007	10UF 10V
C741	4822 124 10794	10V 10U
C742	4822 122 33725	16V 1U
C743	4822 122 33731	25V 0.1U
C744,45	4822 124 41003	6.3V 47U
C746	4822 122 33748	50V 0.01U
C747	4822 122 33731	25V 0.1U
C748	4822 124 21668	10UF 16V
C749,50	4822 122 33731	25V 0.1U
C751	4822 124 41003	6.3V 47U

DIODES

D702	4822 130 80729	MA141A
D703,04	4822 130 80733	1SS250

FILTERS

FL701	4822 242 72123	FILTER
FL702	4822 242 72135	FILTER
FL703	4822 242 72124	FILTER
FL704	4822 242 72127	FILTER
FL705	4822 242 72136	FILTER

INTEGRATED CIRCUITS

IC701	4822 209 62177	MN15867VFK
IC702	4822 209 61965	AN2584NFAP
IC704	4822 209 62169	AN6545SP
IC705	4822 209 71449	NJM3415M
IC706	4822 209 62171	AN6664S

COILS

L701	4822 157 62334	
L702	4822 157 62333	100UH
L703	4822 157 52486	33UH
L704	4822 157 62055	15UH
P702	4822 265 20493	MALE 2P
P704	4822 265 30724	MALE 3P
P705	4822 265 20429	MALE 2P
P706	4822 265 30799	MALE
P707	4822 265 41017	MALE 10P

TRANSISTORS

Q701	4822 111 91224	UN2211
Q704	4822 130 61073	2SA1255
Q705	4822 130 61078	2SC3138
Q706,07	4822 130 61084	2SD1819
Q708	4822 130 62313	2SD1483

RESISTORS

R701	4822 116 81066	3W22
R702,03	4822 116 81097	3W 56K
R704-06	4822 116 81047	3W 10K
R707,08	4822 116 81097	3W 56K
R709	4822 116 81046	3W 1K
R710-16	4822 116 81048	3W 100K
R717	4822 116 81053	3W 12K
R718	4822 116 81058	3W 150K
R719	4822 116 82493	3W 47K
R720	4822 116 81097	3W 56K
R721,22	4822 116 81058	3W 150K
R723	4822 116 81097	3W 56K
R724	4822 116 82493	3W 47K
R725	4822 116 81047	3W 10K
R728	4822 116 81108	3W 82K
R729	4822 116 81087	3W 390K
R730	4822 116 81093	3W 470K
R731	4822 116 81047	3W 10K
R732	4822 116 82276	3W 8.2K
R733	4822 116 82275	3W 4.7K
R734,38	4822 116 81046	3W 1K
R739	4822 116 81108	3W 82K
R742	4822 116 81046	3W 1K
R743	4822 116 81091	3W 4.7K
R744	4822 116 81047	3W 10K
R745	4822 116 81044	3W 10
R746	4822 116 81075	3W 27K
R747	4822 116 81048	3W 100K
R748,49	4822 116 81076	3W 270K
R750	4822 116 81095	3W 560
R752	4822 116 81075	3W 27K
R753	4822 116 81101	3W 6.8K
R754	4822 116 81098	3W 560K
R758	4822 116 81067	3W 220
R760,61	4822 116 81079	3W 3.3K
R762	4822 116 81067	3W 220

TRANSFORMER

T701	4822 148 60188	TRANSFORMER

VAR. RESISTORS

VR701	4822 100 11607	POTM 50K
VR703	4822 100 30081	POTM 10K

XTALS

X701	4822 242 73545	XTAL

CAMERA OPERATION C.B.A.

CAPACITORS

C6701,02	4822 124 41003	6.3V 47U

DIODES

D6701	4822 130 80159	BR3668S
D6702-9	4822 130 32362	MA165

CONNECTORS

P6701	4822 265 41038	MALE
P6702	4822 265 20494	MALE
P6703	4822 265 30727	MALE
P6704	4822 265 51242	MALE

TRANSISTORS

Q6701	4822 130 41605	2SD636
Q6702	4822 130 42251	2SB641
Q6702	4822 130 41605	2SD636

RESISTORS

R6703	4822 116 52251	1/4W 18K
R6704	4822 116 52239	1/4W 120K
R6705	4822 116 52245	1/4W 150K
R6708	4822 116 52204	1/4W 1K
R6731	4822 116 52204	1/4W 1K
R6732	4822 116 52278	1/4W 390K
R6733	4822 116 52244	1/4W 15K
R6734	4822 116 52271	1/4W 33K
R6735	4822 116 52257	1/4W 22K
R6736	4822 116 52244	1/4W 15K
R6737	4822 116 52277	1/4W 39K

SWITCHES

SW6701-9	4822 276 12403	SWITCH
SW6710	4822 276 12174	SWITCH
SW6711	4822 276 12173	SWITCH

AF&ZOOM POS.C.B.A.

RESISTORS

	4822 116 52213	180E 5% 0,5W

MISCELANEOUS

	4822 256 91633	HOLDER
	4822 209 71452	ON2170

E.V.F. C.B.A.

CAPACITORS

C701	4822 124 40997	6.3V 100U
C702	4822 124 10778	16V 0.68U
C703	4822 124 41017	16V 10U
C704	4822 124 41003	6.3V 47U
C705	4822 124 23247	16V 100U
C706	5322 122 32592	50V 680P
C707	4822 122 33671	16V 0.22U
C708	5322 122 32654	25V 0.023U
C709	4822 124 41017	16V 10U
C710	4822 126 10836	50V 1500P
C711	4822 124 41017	16V 10U
C712	4822 124 22746	10V 47U
C713	4822 124 41004	6.3V 220U
C714	4822 121 43233	100V 3900P
C715	4822 124 41018	16V 22U
C716	4822 122 33125	50V 180P
C717	4822 124 22758	50V 4.7U
C718	4822 126 10843	120P
C719	4822 126 10149	330P
C720,21	4822 126 10841	50V 0.047U
C722	4822 122 33749	50V 0.1U

DIODES

D701	4822 130 32635	MA151K
D702	4822 130 80166	ERA91-02
D703	4822 130 80165	ERA34-10

INTEGRATED CIRCUITS

IC701	4822 209 82776	AN2510S

COILS

L701	4822 157 62331	
L702	4822 157 62332	
P701	4822 267 50472	MALE
P702	4822 265 30387	MALE 4P
P703	4822 265 30428	MALE

TRANSISTORS

Q701	4822 130 42661	2SB709
Q702	4822 130 61087	2SD968A
Q703	4822 130 42659	2SA1022

RESISTORS

R701	4822 051 20688	1/10W 6.8
R702	4822 116 90464	1/10W 6.8K
R703	4822 111 91527	1/10W 3.9K
R704	4822 116 81383	1/10W 1.8K
R705	4822 116 90462	1/10W 4.7
R706	4822 116 81118	1/10W 15
R707	4822 116 80879	1/10W 150
R708	4822 111 91516	1/10W 1K
R709	4822 051 20163	1/10W 16K
R710	4822 111 91533	1/10W 560
R711	4822 111 91516	1/10W 1K
R712	4822 116 90347	1/10W 68K
R713	4822 111 91522	1/10W 2.2K
R714	4822 051 20563	1/10W 5.6K
R715,16	4822 111 91516	1/10W 1K
R717	4822 111 91533	1/10W 560
R718	4822 111 91522	1/10W 2.2K
R719	4822 111 91522	1/ 8W 2.2K
R720	4822 116 81403	1/10W 270K
R721	4822 111 91523	1/10W 22K
R722	4822 116 90464	1/10W 6.8K
R723	4822 111 91516	1/10W 1K
R724	4822 111 91651	1/10W 1M
R726,27	4822 051 20155	1/10W 1.5M
R728	4822 116 81124	1/10W 3.3M
R729	4822 116 90447	1/10W 470K
R730	4822 116 81034	1/10W 820
R731	4822 111 90569	1/ 8W 2.7K

F.B.T.

T701	4822 148 81083	FBT.

THERMISTORS

TH701	4822 116 40087	THERMISTOR

POTMETERS

VR701	4822 100 11307	POTM 2.2K
VR702	4822 100 11606	POTM 4.7K
VR704	4822 100 11306	POTM 2.2M
VR705	4822 100 11305	POTM 1M

E.V.F. LED C.B.A.

D761	4822 130 82127	SLM126VRS
P761	4822 265 30428	MALE
R761	4822 111 91449	1/10W 2.7K

E.V.F.TALLEY LED CBA / NTRL

D751	4822 130 82126	EBR5773X
P751	4822 265 30428	MALE
R751	5322 111 90098	1/ 8W 150
	4822 466 70686	LED SPACER

MAIN C.B.A.

CAPACITORS

C1001	4822 122 33788	50V 82P
C1002	4822 122 33784	50V 560P
C1003	4822 122 33776	50V 390P
C1010	4822 124 21661	100UF 25V
C1011	4822 122 32643	50V 0.047U
C1012	4822 124 23337	220UF 10V
C1013	5322 122 32654	50V 0.022U
C1014	4822 126 10839	50V 0.022U
C1015,16	4822 124 23337	220UF 10V
C1017	4822 124 23316	16V 22U
C1018,19	4822 124 23337	220UF 10V
C1020,21	4822 124 22752	16V 100U
C1026	4822 126 10837	50V 0.015U
C1027	4822 122 33767	50V 2700U
C1028	4822 124 23317	16V 47U
C1029	4822 124 23318	16V 100U
C1030,31	4822 124 22747	
C1032	4822 122 33779	50V 4700P
C1033	4822 124 41007	16V 10U
C1034	4822 122 33748	50V 0.01U
C1035	4822 124 23337	220UF 10V
C1040	4822 126 10839	50V 0.022U
C1041	4822 124 23314	10V 220U
C1042	4822 126 10691	16V 0.1U
C1043	4822 124 22739	6.3V 100U
C1044	4822 124 40998	6.3V 22U

C2001,02	4822 122 33744	50V 100P
C2003	4822 122 33748	50V 0.01U
C2004,05	4822 124 23027	47UF 6.3V
C2006	4822 126 10692	16V 0.047U
C2007	4822 122 33781	50V 4700P
C2009,10	4822 124 23316	16V 22U
C2011	4822 126 10692	16V 0.047U
C2012	4822 126 10155	50V 2200P
C2013	4822 122 33746	50V 1000P
C2014	4822 124 23323	35V 2.2U
C2015,16	4822 122 33725	16V 1U
C2017,18	4822 122 33746	50V 1000P
C2019	4822 124 23027	47UF 6.3V
C2020	4822 122 33778	50V 470P
C2021,22	4822 122 33725	16V 1U
C2023	4822 122 33819	25V 0.033U
C2024	4822 124 23316	16V 22U
C2025,26	4822 124 23027	47UF 6.3V
C2027	4822 122 33748	50V 0.01U
C2028	4822 122 33725	16V 1U
C2029	4822 122 33746	50V 1000P
C2030	4822 126 10691	16V 0.1U
C2032	4822 122 33748	50V 0.01U
C2033	4822 122 33725	16V 1U
C2034	4822 122 33744	50V 100P
C2035	4822 122 33746	50V 1000P
C2036	4822 122 32893	25V 0.1U
C2037	4822 124 23027	47UF 6.3V
C2038	4822 124 23312	6.3V 22U
C2039	4822 124 22739	6.3V 100U
C2040	4822 122 33748	50V 0.01U
C2041	4822 122 33725	16V 1U
C2042	4822 124 23027	47UF 6.3V
C2043	4822 124 41007	16V 10U
C2044	4822 126 10835	16V 0.18U
C2045	4822 121 42167	50V 0.039U
C2046,48	4822 122 33748	50V 0.01U
C2049	4822 126 10703	16V 0.033U
C2050	4822 126 10691	16V 0.1U
C2051,52	4822 124 23027	47UF 6.3V
C2053	4822 124 22739	6.3V 100U
C2054	4822 126 10703	16V 0.033U
C2055	4822 124 23027	47UF 6.3V
C2056-58	4822 124 23339	3,3UF 25V
C2059,61	4822 122 33781	50V 4700P
C2062-64	4822 124 23317	16V 47U
C2065-67	4822 126 10691	16V 0.1U
C2068	4822 124 23261	50V 0.47U
C2071	4822 126 10703	16V 0.033U
C2072-73	4822 122 33726	16V 0.47U
C2078	4822 126 10692	16V 0.047U
C2081	4822 124 23027	47UF 6.3V
C3801	4822 124 23255	16V 100U
C3802,03	4822 122 33748	50V 0.01U
C3805	4822 122 33748	50V 0.01U
C3807	4822 126 10694	50V 0.01U
C3840	4822 122 33769	50V 330P
C3841	4822 126 10834	6.3V 220U
C3842,44	4822 122 33748	50V 0.01U
C3845	4822 121 42272	50V 0.082U
C3846	4822 122 33784	50V 560P
C3847	4822 122 33778	50V 470P
C4001	4822 121 51448	100V 2200P
C4002	4822 125 50372	.CAP. V
C4003	4822 126 10146	50V 5600P
C4007	4822 122 33779	50V 4700P
C4005	4822 126 10145	50V 1200P
C4007	4822 124 10792	35V 1U
C4008	4822 126 10693	25V 0.033U
C4009	4822 124 22747	
C4011	4822 124 23324	25V 8200P
C4012	4822 124 23316	16V 22U
C4013	4822 124 22759	50V 1U
C4014	4822 126 10838	50V 1800P
C4015	4822 124 23027	47UF 6.3V
C4016	4822 124 23317	50V 47U
C4017	4822 124 23316	16V 22U
C4018	4822 124 23314	10V 220U
C4019	4822 124 22756	50V 1U
C4021	4822 126 10693	25V 0.033U
C4022	4822 124 22756	1UF 50V
C4024-26	4822 124 23316	16V 22U
C4027	5322 122 31866	50V 6800P
C4038	4822 124 23317	16V 47U
C4040	4822 122 33753	50V 150P
C4803	4822 124 22747	
C4805	4822 124 23315	10V 10U
C4807	4822 124 22739	6.3V 100U
C4809	4822 124 41013	25V 2.2U
C4813	4822 124 41007	16V 10U
C4814	4822 124 23255	16V 100U
C4815	4822 122 33746	50V 1000P
C4816	4822 122 33768	50V 33P
C4817	4822 124 23313	10V 22U
C4818	4822 124 23255	16V 100U
C4835	4822 126 10834	6.3V 220U
C4837	4822 124 23316	16V 22U
C4839	4822 124 23317	16V 47U
C4840	4822 124 22739	6.3V 100U
C4841	4822 124 23339	3,3UF 25V
C4845	4822 124 23322	25V 3.3U
C4850	4822 122 33782	50V 56P
C4852	4822 124 22756	1UF 50V
C4855	4822 124 22739	6.3V 100U
C4856	4822 124 23255	16V 100U
C4858	4822 124 22739	6.3V 100U
C4859	4822 124 23322	25V 3.3U
C4860	4822 124 23317	16V 47U
C4862	4822 126 10834	6.3V 220U
C4864	4822 122 33753	50V 150P
C5001	4822 126 10688	25V 0.01U
C5002	4822 126 10694	50V 0.01U
C5003	4822 126 10688	50V 0.01U
C5004	4822 126 10694	50V 0.01U
C5005	4822 126 10691	16V 0.1U
C5006	4822 124 23317	16V 47U
C5007	4822 126 10688	25V 0.01U
C5008	4822 124 41003	6.3V 47U
C5009	4822 126 10688	25V 0.01U
C5010	4822 122 33749	50V 0.1U
C5011	4822 126 10688	25V 0.01U
C5013	4822 122 33725	16V 1U
C5014	4822 126 10688	25V 0.01U
C5015	4822 122 33744	50V 100P
C5016,17	4822 126 10688	25V 0.01U
C5018	4822 122 33744	50V 100P
C5019	4822 126 10688	25V 0.01U
C5020	4822 122 33725	16V 1U
C5023	4822 122 33725	16V 1U
C5025	4822 126 10688	25V 0.01U
C5026,27	4822 122 33744	50V 100P
C5028-30	4822 126 10688	25V 0.01U
C5031	4822 122 33725	16V 1U
C5033	4822 124 23027	47UF 6.3V
C5034-36	4822 126 10688	25V 0.01U
C5037	4822 126 10691	16V 0.1U
C5038	4822 122 33753	50V 150P
C5039	4822 122 33751	50V 120P
C5040	4822 122 33775	50V 39P
C5041,44	4822 122 33781	50V 4700P
C5045	4822 126 10688	25V 0.01U
C6001	4822 126 10691	16V 0.1U
C6002	4822 124 23317	16V 47U
C6003	4822 124 23321	25V 10U
C6004	4822 124 22747	

C6005	4822 126 10691	16V 0.1U
C6006,07	4822 122 33748	50V 0.01U
C6008	4822 124 23317	16V 47U
C6009	4822 126 10691	16V 0.1U
C6010	4822 122 33768	50V 33P
C6011	4822 125 60143	
C6014	4822 126 10691	16V 0.1U
C6015	4822 124 23317	16V 47U
C6016-18	4822 126 10691	16V 0.1U
C6019	4822 124 23326	25V 22U
C6020	4822 126 10691	16V 0.1U
C6021-23	4822 122 33748	50V 0.01U
C6024	4822 126 10842	50V 5600P
C6025	4822 122 33749	50V 0.1U
C6026	4822 126 10691	16V 0.1U
C6027	4822 124 23321	25V 10U
C6028	4822 124 22756	1UF 50V
C6029	4822 122 33769	50V 330P
C6030	4822 124 23319	25V 220U
C6031	4822 122 33753	50V 150P

DIODES

D1001,02	4822 130 80526	MA141K
D1003	4822 130 80174	MA159A
D1004	4822 130 80177	MA3075H
D1005,06	4822 130 80526	MA141K
D2001-03	4822 130 80527	MA143
D2005	4822 130 80728	MA121
D2012,13	4822 130 80526	MA141K
D3801,02	4822 130 80289	MA141WK
D3803	4822 130 32871	MA3056
D4801	4822 130 80526	MA141K
D4802	4822 130 80289	MA141WK
D4803,04	4822 130 80527	MA143
D4805	4822 130 80526	MA141K
D4806	4822 130 80376	MA141WA
D4807	4822 130 80527	MA143
D4808	4822 130 80376	MA141WA
D6001	4822 130 80376	MA141WA
D6002	4822 130 80526	MA141K
D6003	4822 130 80376	MA141WA
D6004	4822 130 80289	MA141WK
D6005	4822 130 80376	MA141WA
D6009	4822 130 80376	MA141WA
D6010,11	4822 130 80526	MA141K
D6012	4822 130 80289	MA141WK
D6015	4822 130 80376	MA141WA
D6017	4822 130 80527	MA143
D6018	4822 130 80289	MA141WK
D6019	4822 130 80526	MA141K
D6021-25	4822 130 80526	MA141K
D6026	4822 130 32871	MA3056
D6029	4822 130 80526	MA141K

INTEGRATED CIRCUITS

IC1001	4822 209 82947	BA6149LS
IC1002	4822 209 83188	UN102
IC1003	4822 209 83921	AN6562S
IC1004	4822 209 83555	AN6914S
IC1005	4822 209 71423	AN1358S
IC2001	4822 209 62511	MN67461VDTF
IC2002	4822 209 61968	AN3798NS
IC2005	4822 209 62168	AN3841SR
IC2006	4822 209 71455	TA8402F
IC4001	4822 209 83189	UPC1513G
IC4002	4822 209 72839	UPC2300G
IC4801	4822 209 61396	BA3308
IC4804	5322 209 72622	MN4053BS
IC4805	4822 209 71449	NJM3415M
IC5001	4822 209 61966	AN3346FBP
IC6001	4822 209 72842	UPD4094BG
IC6002	4822 209 62512	M50963MS2AC
IC6003	4822 209 61987	S3500A2
IC6004	4822 209 61993	UPD6145G617A
IC6005	4822 209 62513	M54543AL
IC6006	4822 209 72842	UPD4094BG
IC6007	4822 209 62527	MN12821
IC6008	4822 209 72842	UPD4094BG

COILS

L1001	4822 157 52157	47UH
L1002	4822 157 53419	180UH
L1003	4822 157 52932	
L1004	4822 157 52157	47UH
L1005	4822 157 62405	
L1006	4822 157 52157	47UH
L1007	4822 157 53417	600UH
L1008	4822 157 52158	300UH
L1011,12	4822 157 52163	200UH
L3801	4822 157 62364	
L4001	4822 157 52163	200UH
L4002	4822 157 52307	8200UH
L4003	4822 157 62367	15UH
L5001-03	4822 157 62364	
L5004	4822 157 62363	
L5005	4822 157 52083	12UH
L6001	4822 157 62364	
L6002	4822 157 53423	
L6003	4822 157 62368	39UH

CONNECTORS

P1001	4822 265 30387	MALE 4P
P1003	4822 265 30428	MALE 2P
P2001	4822 267 51003	
P2002	4822 265 41042	
P3801	4822 265 51243	MALE
P3802	4822 267 51002	
P3803	4822 265 30829	MALE 5P
P3804	4822 265 41017	MALE 10P
P3805	4822 265 20429	MALE 2P
P4001	4822 265 30725	MALE 4P
P4002	4822 265 41039	MALE 7P
P4004	4822 265 20429	MALE 2P
P4801	4822 265 41041	
P5001	4822 265 41044	
P6002	4822 265 41017	MALE 10P
P6003	4822 267 60288	
P6004	4822 265 30428	MALE 2P
P6005	4822 265 20429	MALE 2P
P6006	4822 265 30724	MALE 3P
P6007	4822 265 41041	
P6010	4822 265 30724	MALE 3P
P6011	4822 265 41043	MALE
P6012	4822 265 30428	MALE 2P
P6013	4822 265 20493	MALE 2P
P6014	4822 265 41039	MALE 7P
P6016	4822 265 20429	MALE 2P

TRANSISTORS

Q1001	4822 130 61075	2SB1218
Q1002	4822 130 60564	2SB956
Q1003	4822 130 60572	2SD1526
Q1004	4822 130 61315	2SD1119
Q1005	4822 130 42672	2SD602
Q1006	4822 130 42664	2SB970X
Q1007	4822 130 42668	2SD1328X
Q1008	4822 130 42672	2SD602
Q1011	4822 130 61075	2SB1218
Q2001-03	4822 130 60564	2SB956

Q3801,02	4822 130 42664	2SB970X
Q3803,04	4822 111 91928	FMS1-T98
Q3805	4822 130 61082	2SC3938
Q3806	4822 130 61084	2SD1819
Q3808	4822 130 61075	2SB1218
Q3809	4822 130 60569	2SC3757
Q3810	4822 130 61075	2SB1218
Q4001	4822 130 61085	2SD1820
Q4005	4822 130 42664	2SB970X
Q4802	4822 130 62315	2SA1531
Q4804,05	4822 130 61084	2SD1819
Q4808	4822 130 42668	2SD1328
Q4810	4822 130 42668	2SD1328X
Q5001	4822 130 61075	2SB1218
Q5002	4822 130 61074	2SA812
Q5002	4822 130 41956	2SA1175
Q5004,05	4822 130 62225	XN4504
Q6001	4822 130 61075	2SB1218
Q6002	4822 130 42664	2SB970X
Q6003	4822 130 61084	2SD1819
Q6004,05	4822 130 61085	2SD1820
Q6006	4822 130 61084	2SD1819
QR6007	4822 209 83363	FMW1
QR1001	4822 130 60859	FMG2
QR1002	4822 130 61053	GA1L4M
QR2005	4822 130 61285	GN1F4Z
QR3801	4822 130 61284	GN1F4M
QR3802	4822 130 61283	GA1F4Z
QR3803	4822 130 61284	GN1F4M
QR3804	4822 130 61283	GA1F4Z
Q3805	4822 130 60858	FMG1
QR3806	4822 130 61053	GA1L4M
QR3807	4822 130 61052	GA1F4M
QR3808	4822 209 83362	FMS1
QR3809	4822 130 61052	GA1F4M
QR3810,11	4822 130 61283	GA1F4Z
QR3812,14	4822 130 61052	GA1F4M
QR4002	4822 130 61052	GA1F4M
QR4003,04	4822 130 61398	GN1L3Z
QR4803,04	4822 130 61053	GA1L4M
QR4805	4822 130 61055	GN1L4M
QR4806	4822 111 91932	GN1L4Z
QR4807	4822 130 61055	GN1L4M
QR4808	4822 130 61053	GA1L4M
QR5001	4822 111 91929	GA1A4Z
QR5002,03	4822 130 60858	FMG1
QR6001	4822 130 62229	IMD2
QR6002	4822 130 61052	GA1F4M
QR6003	4822 111 91933	XN1217
QR6004	4822 130 61053	GA1L4M
QR6005	4822 130 61283	GA1F4Z
QR6006	4822 111 91933	XN1217
QR6009	4822 130 61283	GA1F4Z
QR6010	4822 130 62226	GA1L4L
QR6011	4822 111 91933	XN1217
QR6014	4822 111 91933	XN1217
QR6017	4822 130 61401	GN1A4M
QR6019	4822 111 91927	FMA1
QR6020	4822 130 60859	FMG2
QR6022	4822 130 61055	GN1L4M
QR6027	4822 130 61053	GA1L4M
QR6029,30	4822 130 61053	GA1L4M
QR6031-33	4822 130 61672	FMA2
QR6034	4822 130 61055	GN1L4M

RESISTORS

R1001	4822 116 81097	3W 56K
R1002	4822 116 81068	3W 2.2K
R1002	4822 116 81047	3W 10K
R1004	4822 116 81068	3W 2.2K
R1005	4822 116 81047	3W 10K
R1006	4822 116 81091	3W 4.7K
R1007	4822 116 81047	3W 10K
R1008	4822 116 81082	3W 330K
R1009	4822 116 81058	3W 150K
R1010	4822 116 81096	3W 5.6K
R1011	4822 116 82496	3W 5.1K
R1012,13	5322 111 90096	1/8W 1.2K
1R014,15	4822 051 10152	1/8W 1.5K
R1016,17	4822 116 82496	3W 5.1K
R1018	5322 111 90096	1/8W 1.2K
R1019	4822 111 90171	1/8W 820
R1020,21	4822 116 81063	3W 18K
R1022,23	4822 116 81099	3W 680
R1024	4822 116 81057	3W 15K
R1025	4822 116 81096	3W 5.6K
R1026,31	4822 116 81084	3W 390
R1032	4822 116 81107	3W 820
R1033	4822 116 81046	3W 1K
R1034	4822 116 81096	3W 5.6K
R1035	4822 116 81049	3W 1M
R1036	4822 116 81068	3W 2.2K
R1037	4822 116 81074	3W 2.7K
R1038	4822 116 81091	3W 4.7K
R1039	4822 116 81074	3W 2.7K
R1041	4822 116 81077	3W 33
R1042	4822 116 81102	3W 68K
R1043	4822 116 81053	3W 12K
R1044	4822 111 90239	1/8W 56
R1045	4822 116 81048	3W 100K
R1046	4822 116 81103	3W 680K
R1047	4822 116 81048	3W 100K
R1048	4822 116 81046	3W 1K
R1051	4822 116 81099	3W 680
R1052-54	4822 116 81049	3W 1M
R1055	4822 116 81093	3W 470K
R1056	4822 116 81049	3W 1M
R1057	4822 051 30134	3W 180K
R1058	4822 116 81099	0,03W 680
R1071	4822 252 20204	FUSE
R1072-75	4822 253 40179	FUSE
R1076	4822 116 81047	3W 10K
R1077	4822 116 81063	3W 18K
R2001,02	4822 116 81046	3W 1K
R2003	4822 116 81074	3W 2.7K
R2004	4822 116 81081	3W 33K
R2005	4822 116 81092	3W 47K
R2006	4822 116 81048	3W 100K
R2007	4822 116 81058	3W 150K
R2009	4822 116 81058	3W 150K
R2010	4822 116 81142	3W 8.2K
R2011	4822 116 81097	3W 56K
R2012	4822 116 81076	3W 270K
R2013	4822 116 81058	3W 150K
R2014	4822 116 81047	3W 10K
R2015	4822 116 81053	3W 12K
R2017	4822 116 81047	3W 10K
R2018	4822 116 81046	3W 1K
R2019	4822 116 81049	3W 1M
R2020	4822 116 81068	3W 2.2K
R2021	4822 116 81112	JUMPER
R2022	4822 116 81073	3W 270
R2025	4822 116 81086	3W 39K
R2028	4822 116 81049	3W 1M
R2029	4822 116 81057	3W 15K
R2030	4822 116 81075	3W 27K
R2031	4822 116 81081	3W 33K
R2032	4822 116 81076	3W 270K
R2034	4822 116 81074	3W 2.7K
R2038	4822 116 82506	
R2040	4822 116 81046	3W 1K
R2041	4822 116 81079	3W 3.3K
R2042	4822 116 81097	3W 56K

R2043	4822 116 81067	3W 220
R2044	4822 116 81106	3W 82
R2045	4822 051 10228	1/8W 2.2
R2046,47	4822 051 10188	1/8W 1.8
R2048	4822 116 81057	3W 15K
R2049,51	4822 116 81047	3W 10K
R2053,54	4822 116 81101	3W 6.8K
R2060	4822 116 81082	3W 330K
R2062	4822 116 81046	3W 1K
R2066	4822 116 81067	3W 220
R2067-69	4822 051 10159	1/10W 15
R2070-72	4822 116 81048	3W 100K
R2077	4822 116 81085	3W 3.9K
R2079	4822 116 81056	3W 1.5K
R2080	4822 116 81112	JUMPER
R2085,86	4822 116 81048	3W 100K
R2087	4822 116 81112	JUMPER
R2090	4822 116 81046	3W 1K
R3801	4822 116 81089	3W 470
R3802	4822 116 81099	3W 680
R3803-05	4822 116 81091	3W 4.7K
R3806	4822 116 81046	3W 1K
R3808	4822 116 81074	3W 2.7K
R3811,12	4822 116 81091	3W 4.7K
R3813	4822 116 81057	3W 15K
R3814	4822 116 81047	3W 10K
R3816	4822 116 81069	3W 22K
R3830	4822 116 81069	3W 22K
R3831	4822 116 81097	3W 56K
R3834	4822 116 82495	3W 39K
R3837	4822 116 81047	3W 10K
R3841-44	4822 116 81046	3W 1K
R3845	4822 116 81053	3W 12K
R3846	4822 116 81045	3W 100
R3848	4822 116 81099	3W 680
R3851	4822 116 81046	3W 1K
R3858	4822 116 81047	3W 10K
R3876	4822 116 81079	3W 3.3K
R3885	4822 116 81069	3W 22K
R3886-88	4822 116 81047	3W 10K
R3889	4822 116 81047	3W 10K
R3890	4822 116 81068	3W 2.2K
R3891	4822 116 52204	1K 5% 0,5W
R3892	4822 116 81047	3W 10K
R4001	4822 116 81044	3W 10
R4002	4822 116 81069	3W 22K
R4003	4822 116 81047	3W 10K
R4004	4822 116 81075	3W 27K
R4005	4822 116 81055	3W 150
R4006	4822 116 81064	3W 180K
R4007	4822 116 81079	3W 3.3K
R4009	4822 116 81052	3W 1.2K
R4010	4822 116 81091	3W 4.7K
R4011	4822 116 81078	3W 330
R4012	4822 116 81091	3W 4.7K
R4013	4822 116 81057	3W 15K
R4014	4822 116 81052	3W 1.2K
R4016	4822 116 81061	3W 180
R4018	4822 116 81049	3W 1M
R4027	4822 116 81095	3W 560
R4044	4822 116 81048	3W 100K
R4049	4822 116 81047	3W 10K
R4852	4822 116 81046	3W 1K
R4053	4822 116 81096	3W 5.6K
R4054	4822 116 81078	3W 330
R4055,56	4822 116 81046	3W 1K
R4058,59	4822 116 81112	JUMPER
R4802	4822 116 81092	3W 47K
R4804	4822 116 81048	3W 100K
R4806	4822 116 81048	3W 100K
R4808	4822 116 81092	3W 47K
R4810	4822 116 81052	3W 1.2K

R4812	4822 116 81067	3W 220
R4814	4822 116 81081	3W 33K
R4816	4822 116 81068	3W 2.2K
R4817	4822 116 81112	JUMPER
R4818	4822 116 81079	3W 3.3K
R4819	4822 116 81112	JUMPER
R4820	4822 116 81047	3W 10K
R4824	4822 116 81082	3W 330K
R4825	4822 051 10221	1/8W 220
R4826	4822 116 81112	JUMPER
R4827	4822 116 81086	3W 39K
R4828	4822 116 81067	3W 220
R4829	4822 116 81047	3W 10K
R4839	4822 116 81067	3W 220
R4843	4822 116 81069	3W 22K
R4845	4822 116 81046	3W 1K
R4846	4822 116 81071	3W 220K
R4847	4822 116 81063	3W 18K
R4848	4822 051 10221	1/8W 220
R4849	4822 116 81071	3W 220K
R4853	4822 116 81071	3W 220K
R4855,56	4822 116 81096	3W 5.6K
R4857	4822 116 81053	3W 12K
R4858	4822 116 81076	3W 270K
R4859	4822 116 81091	3W 4.7K
R4862	4822 116 81046	3W 1K
R4863,64	4822 116 81071	3W 220K
R4865,66	4822 116 81096	3W 5.6K
R4868	4822 111 90339	1/8W 120
R4870	4822 116 81142	3W 8.2K
R4872	4822 116 81096	3W 5.6K
R4873	4822 116 81054	3W 120K
R4876	5322 111 90091	1/8W 100
R4882	4822 116 81046	3W 1K
R4883	4822 116 81054	3W 120K
R4885	4822 111 90239	1/8W 56
R4886	4822 116 81052	3W 1.2K
R4887	4822 116 81089	3W 470
R4888	4822 116 81092	3W 47K
R4890,91	4822 116 81112	JUMPER
R4892	4822 116 81092	3W 47K
R5001	4822 116 81056	3W 1.5K
R5002	4822 116 81047	3W 10K
R5003-05	4822 116 81046	3W 1K
R5006	4822 116 81089	3W 470
R5007	4822 116 81099	3W 680
R5008	4822 116 81112	JUMPER
R5009	4822 116 81047	3W 10K
R5010	4822 116 81068	3W 2.2K
R5011-12	4822 116 81044	3W 10
R5013-14	4822 116 81068	3W 2.2K
R5015-16	4822 116 81044	3W 10
R5017-18	4822 116 81099	3W 680
R5019	4822 116 81068	3W 2.2K
R5020	4822 116 81047	3W 10K
R5021-24	4822 116 81081	3W 33K
R5025	4822 116 81086	3W 39K
R5026	4822 116 81142	3W 8.2K
R5027	4822 116 81073	3W 270
R5028	4822 116 81084	3W 390
R5031-34	4822 116 81091	3W 4.7K
R5035-38	4822 116 81047	3W 10K
R5040	5322 111 90376	1/8W 4.7
R5041,42	4822 116 81099	3W 680
R5043	4822 116 81103	3W 680K
R5044	4822 116 81068	3W 2.2K
R6001	4822 116 81047	3W 10K
R6003	4822 116 81079	3W 3.3K
R6004	4822 116 81096	3W 5.6K
R6005-09	4822 116 81047	3W 10K
R6010	4822 116 90446	1/10W 470

R6011	4822 116 81047	3W 10K
R6015-23	4822 116 81047	3W 10K
R6025	4822 116 81564	1/10W 390
R6027	4822 116 81047	3W 10K
R6029	4822 116 81047	3W 10K
R6030-31	4822 116 81056	3W 1.5K
R6032-39	4822 116 81047	3W 10K
R6040	4822 116 81092	3W 47K
R6041	4822 116 81058	3W 150K
R6042	4822 116 81064	3W 180K
R6043-45	4822 116 81046	3W 1K
R6046	4822 116 81047	3W 10K
R6047,50	4822 116 81092	3W 47K
R6051	4822 116 81064	3W 180K
R6052	4822 116 81086	3W 39K
R6053	4822 116 81085	3W 3.9K
R6054-56	4822 116 81047	3W 10K
R6058	4822 116 81074	3W 2.7K
R6059-60	4822 116 81047	3W 10K
R6062	4822 116 81071	3W 220K
R6063	4822 116 81087	3W 390K
R6064	4822 116 81046	3W 1K
R6065	4822 116 81092	3W 47K
R6066	4822 116 81046	3W 1K
R6067	4822 116 81097	3W 56K
R6068	4822 116 81046	3W 1K
R6069	4822 116 81064	3W 180K
R6070	4822 116 81046	3W 1K
R6071	4822 116 81064	3W 180K
R6072	4822 116 81046	3W 1K
R6073	4822 116 81564	1/10W 390
R6074-75	4822 051 10331	1/8W 330
R6076	4822 051 10271	1/8W 270
R6077-79	4822 116 81047	3W 10K
R6080	4822 116 81564	1/10W 390
R6081	4822 116 81058	3W 150K
R6083	4822 116 81046	3W 1K
R6084-87	4822 116 81047	3W 10K
R6088	4822 116 81046	3W 1K
R6089	4822 116 81079	3W 3.3K
R6090	4822 116 81048	3W 100K
R6091	4822 116 81049	3W 1M
R6092	4822 116 90441	1/10W 100
R6093	4822 116 81046	3W 1K
R6094	5322 111 90091	1/8W 100
R6095-96	4822 116 81046	3W 1K
R6097	5322 111 90091	1/8W 100
R6098-03	4822 116 81564	1/10W 390
R6104	4822 116 82358	1/10W 68K
R6105	4822 116 81564	1/10W 390
R6106	4822 116 81047	3W 10K
R6107	4822 116 81091	3W 4.7K
R6108	4822 116 81102	3W 68K
R6109	4822 116 81075	3W 27K
R6110-12	4822 116 81047	3W 10K
R6116	4822 116 81092	3W 47K
R6300	4822 116 81068	3W 2.2K

SWITCHES

S6001	4822 276 12425	SWITCH

TRANSFORMERS

T1001	4822 146 21368	TRANSFORMER
T4001	4822 148 81094	FILTER

VAR. RESISTORS

VR1001	4822 100 30084	POTM 5K
VR1002	4822 100 30093	POTM 2K
VR1003	4822 100 30084	POTM 5K
VR2001	4822 100 30092	POTM 100K
VR3801	4822 100 30085	POTM 50K
VR4001	4822 100 30093	POTM 2K
VR6001	4822 100 30092	POTM 100K

XTALS

X1001	4822 242 70966	XTAL
X6001	4822 242 73545	XTAL
X6002	4822 242 72143	XTAL

MISCELANEOUS

	4822 466 70676	FIXING HINGE
	4822 466 10588	FLEXIBLE CABLE

CAPACITORS

C01-02	4822 126 10695	50V 0.01U
C03	4822 122 33749	50V 0.1U
C04	4822 126 10692	16V 0.047U
C05	4822 126 10619	50V 220P
C06	4822 126 10846	50V 470P
C07	4822 126 10844	25V 680P
C08	4822 126 10845	50V 390P
C09-10	4822 122 33748	50V 0.01U
C13	4822 122 33748	50V 0.01U
C14	4822 126 10695	50V 0.01U
C15-17	4822 122 33748	50V 0.01U
C18	4822 122 33788	50V 82P
C19	4822 126 10844	25V 680P
C21-22	4822 122 33748	50V 0.01U
C3001-02	4822 124 22742	6.3V 150U
C3003	4822 124 22754	4.7UF 16V
C3004	4822 124 11089	35V 0.1U
C3005	4822 124 41007	16V 10U
C3006	4822 122 33768	50V 33P
C3007	4822 122 33761	50V 22P
C3008	4822 122 33752	50V 15P
C3009-10	4822 124 41015	4,7UF 16V
C3011	4822 122 33788	50V 82P
C3012	4822 122 33782	50V 56P
C3013	4822 122 33761	50V 22P
C3015	4822 124 23338	25V 2.2U
C3016	4822 122 33788	50V 82P
C3017	4822 124 23338	25V 2.2U
C3019	4822 124 41015	4,7UF 16V
C3020	4822 124 23325	6.3V 100U
C3021	4822 124 10787	16V 10U
C3022-23	4822 122 33748	50V 0.01U
C3024	4822 122 33752	50V 15P
C3025	4822 122 33748	50V 0.01U
C3026	4822 122 33746	50V 1000P
C3027	4822 124 41015	4,7UF 16V
C3030	4822 122 33748	50V 0.01U
C3031	4822 124 41007	16V 10U
C3032	4822 126 10691	16V 0.1U
C3033	4822 124 41015	4,7UF 16V
C3034	4822 122 33748	50V 0.01U
C3035	4822 124 22756	1UF 50V
C3036	4822 124 23027	47UF 6.3V
C3037	4822 126 10691	16V 0.1U
C3038	4822 122 33748	50V 0.01U
C3039	4822 122 33749	50V 0.1U
C3040	4822 124 41007	16V10U
C3041-43	4822 122 33748	50V 0.01U
C3044	4822 124 23232	220UF 4V
C3045	4822 124 22756	1UF 50V
C3047	4822 126 10702	50V 390P
C3048	4822 122 33761	50V 22P
C3049	4822 122 33788	50V 82P
C3050	4822 122 33775	50V 39P
C3051	4822 122 33782	50V 56P

C3053	4822 122 33748	50V 0.01U
C3054	4822 124 23325	6.3V 100U
C3055	4822 122 33748	50V 0.01U
C3056	4822 124 41003	6.3V 47U
C3057	4822 122 33748	50V 0.01U
C3059	4822 122 33749	50V 0.1U
C3061	4822 122 33768	50V 33P
C3065	4822 122 33926	50V 12P
C3066	4822 122 33788	50V 82P
C3067	4822 122 33769	50V 330P
C3068	4822 122 33748	50V 0.01U
C3069	4822 122 33744	50V 100P
C3070	4822 124 41007	16V 10U
C3071	4822 124 23232	220UF 4V
C3073	4822 126 10846	50V 470P
C3075	4822 122 33777	50V 47P
C3076	4822 122 33764	50V 27P
C3150	4822 122 33753	50V 150P
C8001	4822 124 41007	16V 10U
C8002	4822 126 10152	25V 0.022U
C8003	4822 122 33766	50V 270P
C8004	4822 122 33778	50V 470P
C8005	4822 122 33749	50V 0.1U
C8006-18	4822 122 33748	50V 0.01U
C8019	4822 124 41015	4,7UF 16V
C8020	4822 124 23338	25V 2.2U
C8021	4822 122 33748	50V 0.01U
C8022	4822 124 23322	25V 3.3U
C8023-24	4822 122 33748	50V 0.01U
C8025	4822 124 22739	6.3V 100U
C8026	4822 126 10704	50V 3P
C8027	4822 122 33746	50V 1000P
C8028	4822 124 22742	6.3V 150U
C8029	4822 122 33748	50V 0.01U
C8030	4822 122 33744	50V 100P
C8031-35	4822 122 33748	50V 0.01U
C8037	4822 122 33785	50V 68P
C8038	4822 122 33772	50V 3300P
C8039	4822 124 23342	0,1UF 50V
C8043	4822 126 10691	16V 0.1U
C8045	4822 122 33775	50V 39P
C8047-48	4822 122 33748	50V 0.01U
C8049	4822 124 40998	6.3V 22U
C8050	4822 126 10696	50V 150P
C8053	4822 122 33749	50V 0.1U

DIODES

D02	4822 130 80727	MA110
D3003-04	4822 130 80526	MA141K
D3005	4822 130 32362	MA165

DELAY LINE

DL8001	4822 320 40228	DELAY

FILTERS

FL3001	4822 157 62167	FILTER
FL3002	4822 157 62171	FILTER
FL3003	4822 157 62164	FILTER
FL8001	4822 242 72125	FILTER
FL8002	4822 157 62166	FILTER
FL8003	4822 157 62169	FILTER
FL8008	4822 157 62165	FILTER
FL8009	4822 157 62168	FILTER

INTEGRATED CIRCUITS

IC01	4822 209 62526	AN3237FA
IC3001	4822 209 62186	VEFH08D
IC3002	4822 209 61983	MST001MS
IC3003	4822 209 61967	AN3580SB
IC3004	4822 209 61991	TL8809F
IC8001	4822 209 61997	M52059AF

COILS

L3001-02	4822 157 62364
L3003	4822 157 62357
L3004	4822 157 62354
L3005	4822 157 62353
L3007	4822 157 62364
L3008	4822 157 62353
L3009	4822 157 62364
L3010	4822 157 62361
L3011	4822 157 62356
L3012	4822 157 62355
L3013	4822 157 62364
L3015	4822 157 62362
L3016	4822 157 62358
L3017	4822 157 62352
L3018	4822 157 62359
L3020	4822 157 62362
L8002	4822 157 62353
L8003	4822 157 62365
L8012	4822 157 62364
L8013	4822 157 62355
L8014	4822 157 62366
L8015	4822 157 62354
L8016	4822 157 62364
L8017	4822 157 62353
L8018	4822 157 62364

CONNECTORS

P3001	4822 267 60264
P3002	4822 265 30802

TRANSISTORS

Q3001	4822 130 61084	2SD1819
Q3002	4822 130 61081	2SC3931
Q3003	4822 130 61084	2SD1819
Q3005-06	4822 130 61084	2SD1819
Q3007	4822 130 61081	2SC3931
Q3008	4822 130 61084	2SD1819
Q3010	4822 130 61084	2SD1819
Q3012	4822 130 61081	2SC3931
Q3013-14	4822 130 62316	2SD1818
Q3015	4822 130 61081	2SC3931
Q3020-21	4822 130 61084	2SD1819
QR10	4822 130 61398	GN1L3Z
QR3001	4822 130 61052	GA1F4M
QR3006	4822 111 91931	GA1L4M-T
QR3008	4822 130 61052	GA1F4M
QR8001	4822 130 60858	FMG1
QR8004-05	4822 130 61052	GA1F4M
QR8006	4822 209 83363	FMW1
QR8007	4822 130 60859	FMG2

RESISTORS

R01	4822 116 81071	3W 220K
R02-03	4822 116 81047	3W 10K
R04	4822 051 30225	3W 2.2K
R07-08	4822 116 81091	3W 4.7K
R09	4822 116 81067	3W 220
R11	4822 116 81046	3W 1K
R13	4822 116 81086	3W 39K
R14	4822 051 30133	3W 13K
R15	4822 116 81097	3W 56K

R16	4822 100 30116	.RES. W
R22	4822 116 81087	3W 390K
R23	4822 116 81057	3W 15K
R24-25	4822 100 30115	.RES. W
R26	4822 116 81073	3W 270
R28	4822 100 30119	.RES. W
R29	4822 116 81098	3W 560K
R31-32	4822 100 30121	POTM 10K
R35	4822 100 30118	.RES. W
R36	4822 100 30117	POTM1.5K
R37	4822 100 30124	POTM 82K
R40-41	4822 100 30123	.RES. W
R42-43	4822 100 30122	.RES. W
R47	4822 100 30122	.RES. W
R51	4822 116 81047	3W 10K
R3001-02	4822 116 81095	3W 560K
R3003-04	4822 116 81046	3W 1K
R3005	4822 116 81074	3W 2.7K
R3006	4822 116 81062	3W 1.8K
R3007	4822 116 81095	3W 560
R3008	4822 116 81046	3W 1K
R3010	4822 116 81046	3W 1K
R3011	4822 116 81107	3W 820
R3012	4822 116 81046	3W 1K
R3013-14	4822 116 81075	3W 27K
R3015	4822 116 81107	3W 820
R3016-17	4822 116 81047	3W 10K
R3019	4822 116 81046	3W 1K
R3021	4822 116 81056	3W 1.5K
R3022	4822 116 81112	3W 0.00
R3023-24	4822 116 81069	3W 22K
R3025	4822 116 81061	3W 180
R3026	4822 116 81045	3W 100
R3028	4822 116 81101	3W 6.8K
R3029	4822 116 81053	3W 12K
R3030	4822 116 81084	3W 390
R3031	4822 116 81053	3W 12K
R3032	4822 116 81046	3W 1K
R3033	4822 116 81089	3W 470
R3034	4822 116 81046	3W 1K
R3035	4822 116 82345	3W 75
R3036-37	4822 116 81069	3W 22K
R3039	4822 116 81078	3W 330
R3040	4822 116 81089	3W 470
R3041	4822 116 81107	3W 820
R3042	4822 111 91516	.1W 1K
R3043	4822 116 81073	3W 270
R3044	4822 116 82344	3W 68
R3045-46	4822 116 81046	3W 1K
R3049-50	4822 116 81046	3W 1K
R3052	4822 116 81081	3W 33K
R3053	4822 116 81057	3W 15K
R3054	4822 116 81046	3W 1K
R3059	4822 116 81046	3W 1K
R3062	4822 116 81047	3W 10K
R3063	4822 116 81096	3W 5.6K
R3068-69	4822 116 81142	3W 8.2K
R3071	4822 116 81085	3W 3.9K
R3072	4822 116 81095	3W 560
R3073	4822 116 81045	3W 100
R3074	4822 116 81046	3W 1K
R3075	4822 116 81099	3W 680
R3076	4822 116 81084	3W 390
R3077	4822 116 81046	3W 1K
R3080	4822 116 81046	3W 1K
R3081	4822 116 81095	3W 560
R3082	4822 116 81052	3W 1.2K
R3083	4822 116 81074	3W 2.7K
R3084	4822 116 81047	3W 10K
R3085	4822 116 81052	3W 1.2K
R3086	4822 116 81046	3W 1K
R3087	4822 116 81048	3W 100K
R3088	4822 116 81046	3W 1K
R3089	4822 116 81112	JUMPER
R3091	4822 116 81068	3W 2.2K
R3092	4822 116 81112	JUMPER
R3093	4822 116 81045	3W 100
R3094	4822 116 81046	3W 1K
R3095	4822 116 52235	.25W 1M
R8001-03	4822 116 81046	3W 1K
R8004	4822 116 81047	3W 10K
R8005	4822 116 81046	3W 1K
R8006	4822 116 81047	3W 10K
R8007	4822 116 82354	.1W 2.2M
R8008	4822 116 81073	3W 270
R8009	4822 116 81052	3W 1.2K
R8010	4822 116 81107	3W 820
R8011	4822 116 81091	3W 4.7K
R8012	4822 116 81046	3W 1K
R8013	4822 116 81097	3W 56K
R8014	4822 116 81068	3W 2.2K
R8015	4822 116 81062	3W 1.8K
R8017	4822 116 81142	3W 8.2K
R8018	4822 116 81057	3W 15K
R8020	4822 116 81062	3W 1.8K
R8025-26	4822 116 81046	3W 1K
R8027	4822 051 30433	3W 43K
R8028	4822 116 81062	3W 1.8K
R8029	4822 116 81046	3W 1K
R8101	4822 116 81069	3W 22K
R8103	4822 116 81092	3W 47K
R8105	4822 116 81046	3W 1K
R8106	4822 116 81074	3W 2.7K
R8107-08	4822 116 81046	3W 1K
R8109	4822 116 81074	3W 2.7K
R8110	4822 116 81062	3W 1.8K
R8111	4822 116 81069	3W 22K
R8112	4822 116 81562	1/10W 22K
R8113	4822 116 81062	3W 1.8K
R8116	4822 116 81092	3W 47K
R8133	4822 116 81112	3W 0.00

VAR. RESISTORS

VR3001-02	4822 100 30093	POTM W
VR3003	4822 100 30095	POTM 500
VR3004	4822 100 30085	POTM 50K
VR3005	4822 100 30095	POTM 500
VR8001	4822 100 30079	POTM 1K
VR8007	4822 100 30082	POTM 20K

XTAL

X8001	4822 242 72359	XTAL

DIODES

D6501	4822 130 80159	BR3668S
D6502-03	4822 130 80376	MA141WA
D6504	4822 130 80526	MA141K
D6505	4822 130 80376	MA141WA
D6508	4822 130 80181	MA4033M
D6510	4822 130 80376	MA141WA
D6511-12	4822 130 80526	MA141K
D6514	4822 130 80526	MA141K
D6516-20	4822 130 80159	BR3668S
D6522	4822 130 80159	BR3668S

CONNECTORS

P6501	4822 265 51291

SWITCHES

SW6501-02	4822 276 12922	SWITCH
SW6503-08	4822 276 11472	SWITCH
SW6510-12	4822 276 11472	SWITCH
SW6514-17	4822 276 11472	SWITCH
SW6518	4822 277 21217	SWITCH

CAPACITORS

C4901	4822 122 33731	25V 0.1U
C4902,03	4822 122 33575	50V 220P

DIODES

D4902	4822 130 82025	MA738
D4903	4822 130 31742	MA151WK
D4904	4822 130 32866	MA151WA
D4905	4822 130 32871	MA3056

CONNECTORS

P4901	4822 265 30801	
P4902	4822 265 30831	MALE
P4903	4822 265 30799	MALE
P4904-05	4822 265 41021	MALE
P4906	4822 265 30697	MALE 4P

TRANSISTORS

Q4901	4822 130 42669	2SD601
QR4901	4822 111 90815	UN2213

RESISTORS

R4902	4822 111 91517	1/10W 10K
R4903	4822 051 20222	1/10W 2.2K
R4904	4822 116 90441	1/10W 100
R4905	4822 051 20222	1/10W 2.2K
R4906	4822 116 90441	1/10W 100

FE HEAD C.B.A.

CAPACITORS

C1501	4822 124 41017	16V 10U
C1502	4822 122 32204	50V 4700P
C1503	4822 126 10875	16V 0.01U
C1504	4822 121 42154	50V 0.033U
L1501	4822 157 52163	220UH
Q1504	4822 130 42546	2SC2603AE2F
R1503	4822 116 52271	1/4W 33K
T1501	4822 148 60187	FILTER

E.V.F. C.B.A.

J1504	4822 267 31009	CONNECTOR
P1505	4822 265 41038	MALE

REMOTE CONTROL JACK C.B.A.

	4822 267 30665	RC JACK

ZOOM/START/STOP SWIT C.B.A.

	4822 276 12403	SWITCH

MECHANISM CONN. C.B.A.

Q1503	4822 209 71452	ON2170
	4822 265 30832	2P
	4822 265 40858	8P
	4822 532 52023	DETECTOR SPACER
	4822 278 90565	MODE SWITCH

TAKE-UP PHOTO C.B.A.

4822 130 42658	PN158NV PHOTO TR.
4822 256 90794	PHOTO TR. HOLDER

SUPPLY PHOTO C.B.A.

4822 130 42658	PN158NV PHOTO TR.
4822 256 90795	PHOTO TR. HOLDER